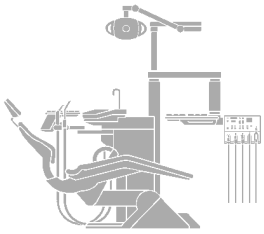
Ritter Contact D720

Dental Work Place
- Operating Instructions
- Maintenance Instructions
- Mounting Instructions



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Ritter HISTORY&INNOVATION

Dear User,

Congratulations for choosing your new Ritter equipment and thank you very much for your confidence!

This modern equipment was produced to the highest standards by our development and production engineers.

You and your staff will get real benefit and advantages out of your new Ritter equipment when you adhere to the technical and operating instructions given during the demonstration while the equipment was put into operation at your surgery.

During daily practice, one or the other question may arise which will be answered by our operating instructions.

For easy operating, consideration of technical aspects and legal regulations and observation of the maintenance instructions, we recommend that you and your staff study this manual very carefully.

In case of technical problems - call our service hotline phone 00 49 (0)37754 / 13-290.

And now enjoy your Ritter equipment!

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Dental work place

Type:	Contact D720
Rated voltage:	230 V~/50 Hz
Rated input:	2300 VA
Mode of operation:	DAB*
Product category:	BF
Protection class:	I
Fuse in installation:	16 A time-lag (e.g. line switch with B-characteristic)
Water pressure:	3,5 ... 5 bar**
Air pressure:	5,5 ... 7 bar (in case of higher pressures, install a pressure reducer)
Max. water consumption:	Dentist's unit: 0,15 l/min Assistant's unit: 4 l/min

Amalgam separator

Type:	Metasys, Multi System Type 1
Efficiency of separation:	min. 95 %
Max. water flow:	4,5 l/min
Certification:	PA-II 3816 (Institut für Bautechnik, Berlin, 27.11.89)

Water disinfection system

Type:	WES D628
Disinfection means:	H2O2***
Min. water pressure:	1 bar
Max. water pressure:	5 bar
Max. water flow:	1,5 l/min

X-ray viewer

Type:	D558
Rated voltage:	230V~/50 Hz
Rated input:	35 VA
Mode of operation:	DB****
Product category:	B
Protection Class:	II

Dental operating light

Type:	D428U
Rated voltage:	230V~/50 Hz
Rated input:	130VA
Mode of operation:	DB****
Product category:	B

Explanations to type plates

Attention,
See accompanying documents

Non-ionizing
electromagnetic radiation

IPX1 Closed equipment
Protected against spilling water (foot controller)

* DAB = continuous operation with intermittent load. The permissible load times are adapted to the working mode of the dentist (please refer also to the instructions for the individual units and/or instruments).

** At site there has to be a back-flush protective filter (mesh size 80 - 120 mm) for the water inlet pipe to the supply unit.

*** Addition of stabilized H2O2 with a concentration of 35 - 50 mg/l to any water coming into contact with the patient.

Interference immunity

Interference immunity limit: 3 V/m , complies with regulations

Interference frequency

according to EN 60601-1-2 resp. EN 55011 type B; for operation in residential areas or nets which are directly connected with the low voltage net of the power supply company.

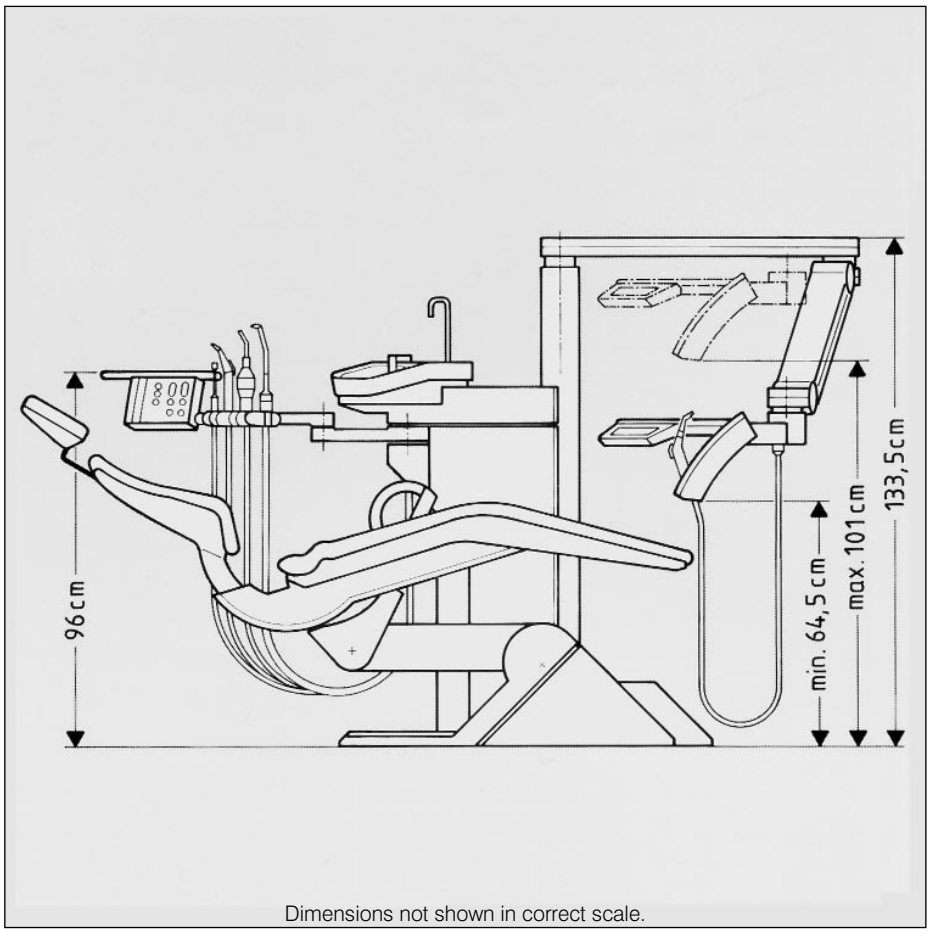
CE-Approval

according to standard 93/42/EEC for medical products

CE 0366

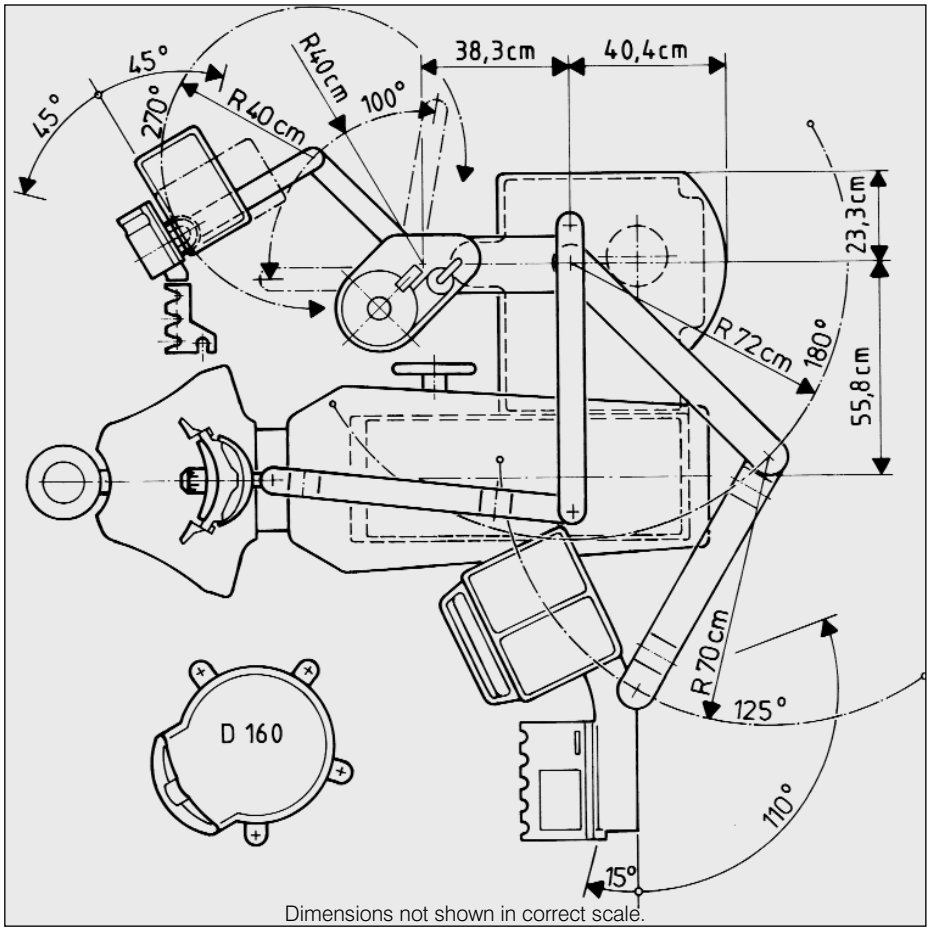
These units are not to be operated in areas with risks of explosion.

Technical modifications reserved.



Dimensions not shown in correct scale.

The dental work place Contact D720 enables the dentist to work either sitting or standing.



Dimensions not shown in correct scale.

Swivel arm and flexarm have a large working radius and can easily be brought into any desired position.

CE 0366

Our equipment complies to the safety standards for medical products (MPG) resp. the regulation 93/42/EEC for medical products.It also complies to the VDE-requirements for electromedical devices DIN IEC 601, part 1 / DIN VDE 0750, part 1.It is suited for connection to supply lines installed according to the VDE 0107 regulations for medically used rooms.

We can only accept responsibility for the safety properties of our equipment, if installation, maintenance, repair and modifications are carried out by our workshop or by a person explixitly authorized by us. Further, the equipment has to be correctly handled according to our operating instructions.

In case of failure, structural parts effecting the security of the device are to be replaced by original parts only.

In case of repair, the technician must issue a certificate as to the kind and extent of work performed and, if applicable, indicate any changes of nominal data and operating range.The certificate must contain the date of repair, the name of the executing company and a signature (according to MPG, DIN VDE 0750 / DIN VDE 0751).

Close to the equipment do not operate any apparatus producing electromagnetic emissions (such as wireless phones, micro-wave therapeutics devices,...).

According to law, electric equipment is to be disposed by authorized disposal firms only.

In case of maintenance work or trouble shooting - Caution!
Cut-off power supply first!

The unit can be sold with or without HF electro-surgical unit. The special obligations resulting from the classification have to be adherred to, i.e. the user is obliged to perform technical. A the stock book (MPG § 22 and MPBetreibV §§ 5 ... 9.

The safety standards for medical products (MPG) and all legal obligations are to be fully observed by the user.

Scope and schedules of safety-relevant inspections according to § 6 of MPBetreibV 29.06.98 are as follows:

At least once a year the following safety-relevant inspections according to DIN VDE 0750 and DIN VDE 0751 have to be performed.

Visual inspection of equipment and accessories,inspection of ground conductor according to DIN VDE 0751,measurement of leakage current according to DIN VDE 0751,performance test of the equipment giving due regard to the accompanying documents.

We recommend to keep an equipment control log for documenting the results of the safety-relevant inspections.

Please do not forget to return us the guarantee card within 15 days after installation of the unit.

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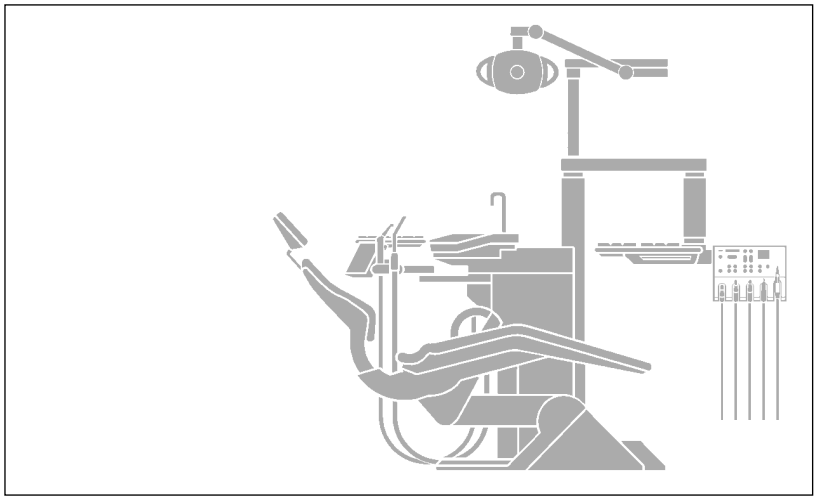
Ritter Contact D720

Dental unit
Operating instructions



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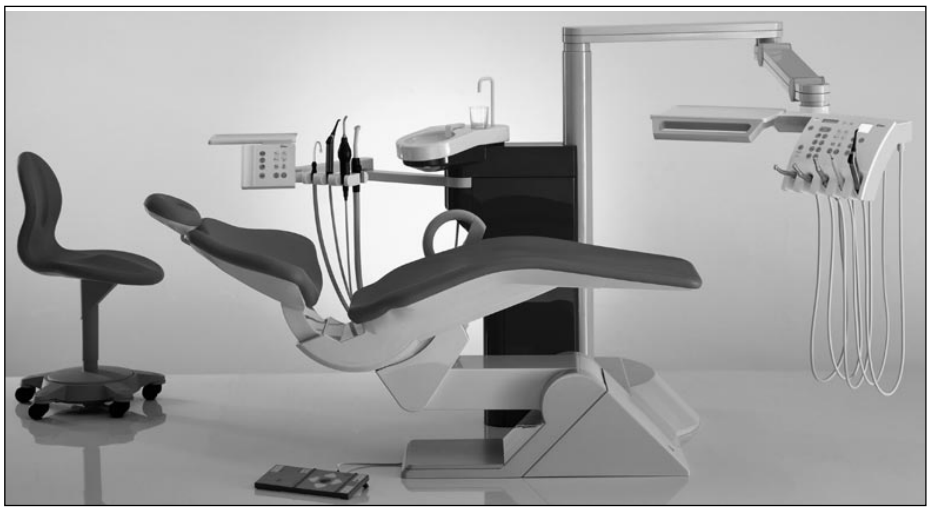


We recommend you to read this service manual very carefully in order to have full knowledge of all the advantages this dental work place is offering you.

Contact D720, Dentist's Unit

Dentist's unit with free hanging instrument Hoses. Instrument section on flexarm. Supply unit integrated in pedestal of supporting column. Unit-mounting of dental operation light Starlite D 428 as well as of X-ray viewer possible. Optionally, the dental work place can be equipped with the water disinfection system WES D 628.

The main characteristics are:

- Compact configuration, little space requirement.
- Practice-adapted instrumentation with instruments on different levels
- Illumination for 3 burr instruments.
- Motor control with firm tractive power in every speed range. Setting for torque limitation.
- Reverse suction-free spray supply to all burr instruments.
- Clear indicator fields showing the set functions.
- Programming of the functions and of the set values on different levels (Standard program, Alternative programs).
- Blocking of each chair function when any instrument is in operation.
- Integrated digital clock with STOP function for curing light.
- Single combined foot panel for dentist's unit and patient chair.
- Control elements for patient chair and assistant's unit.
- Instrument hoses with hose couplings. Water disinfection with very precise dosage. Safety for patient and equipment.
- Easy to move swivel arm (precision needle bearing) with pneumatic brakes.
- Small X-ray viewer integrated in control panel.
- Wear-resistant switch elements, pressure transducer technique.
- Integrated double tray.
- New design hinge connection, easy to clean.
- Varnished surfaces, easy to clean.
- Functional design, practice-oriented.
- Optionally, the Contact D720 can be equipped either with 4-pedal foot controller or pilot foot switch.

Technical modifications reserved.

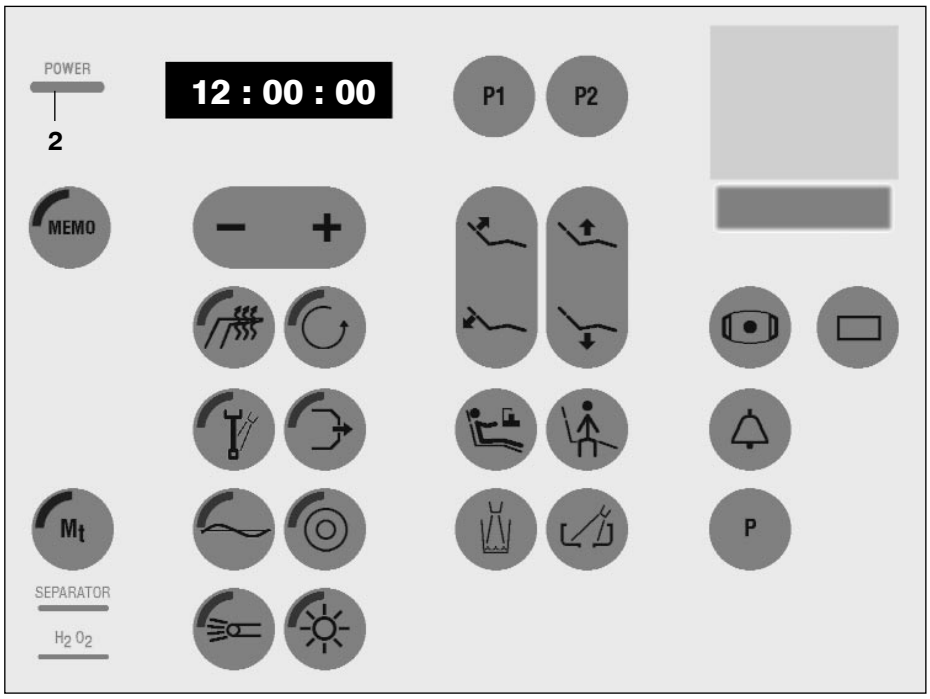
Order of instruments

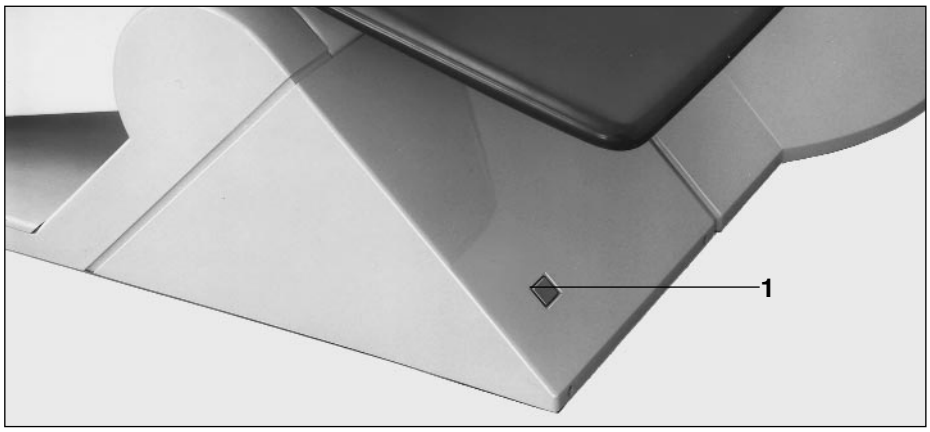
The order of the instruments is ergonomical and adapted to the practice when working with hanging instrument hoses.

Instrumentation (example)

The instrumentation on the right shows a unit equipped with 5 instruments:

illuminated turbine
illuminated micromotor
illuminated micromotor
Piezon scaler (optionally with light)
Topjet six-function syringe





Operation

The unit is activated via the main switch (1) in the patient chair pedestal. The main switch pilot light and the LED indicator (**2**) in the control panel are then illuminated.

Only the instrument taken from its holder is ready for operation. All the other instruments except for the syringe - are locked.

Every day before the first treatment, hold each instrument over a basin for 30 seconds to remove water residues.

Important: For safety reasons, shut-off the main switch when leaving the surgery.

Burr change by the assistant

During a pause in treatment: Do not actuate the foot panel during the burr change to avoid the hazard of injuries.

During treatment:The assistant can take a second instrument from its holder for burr or handpiece change without any danger while treatment with another first instrument is continued.

UnitMain switch

1 Main switch at the patient chair or at connection box ON/OFF
2 LED indicator illuminated: Unit ON via main switch

Starlite D428

3 key, dental operating light ON/OFF

X-ray viewer

4 X-ray viewer
5 key, X-ray viewer ON/OFF
6 film holder (magnet)

Patient chair

7 key, patient chair UP/DOWN
8 ey, backrest UP/DOWN
9 program key P1,1st treatment position
10 program key P2, 2nd treatment position
11 program key, mouth rinse position
12 program key, exit position

Cuspidor (assistant's unit)

13 key, cup filler
14 key, bowl flush
15 LED indicator for amalgam separator

Water disinfection system

16 LED indicator for water disinfectant (H2O2)

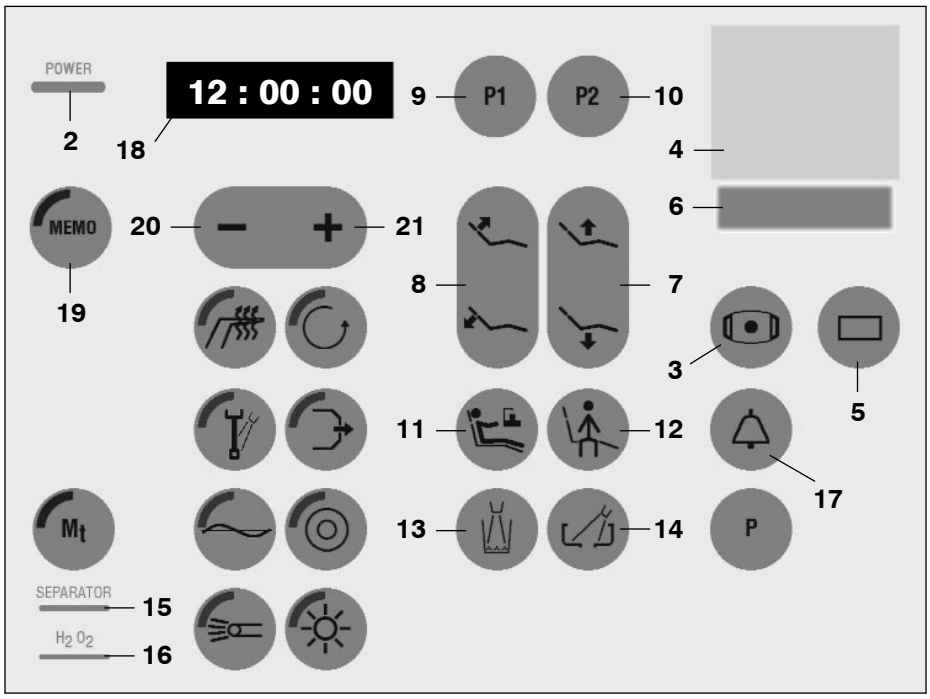
Bell, door opener

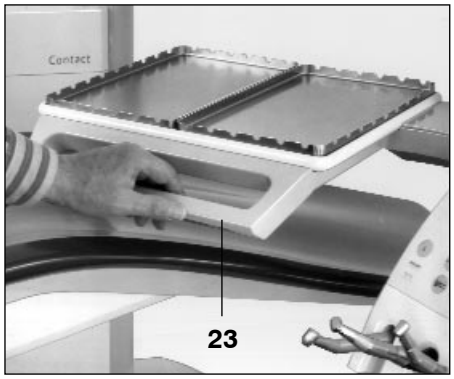
17 key for door opener

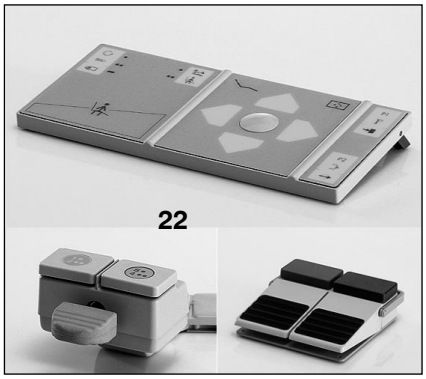
Time setting

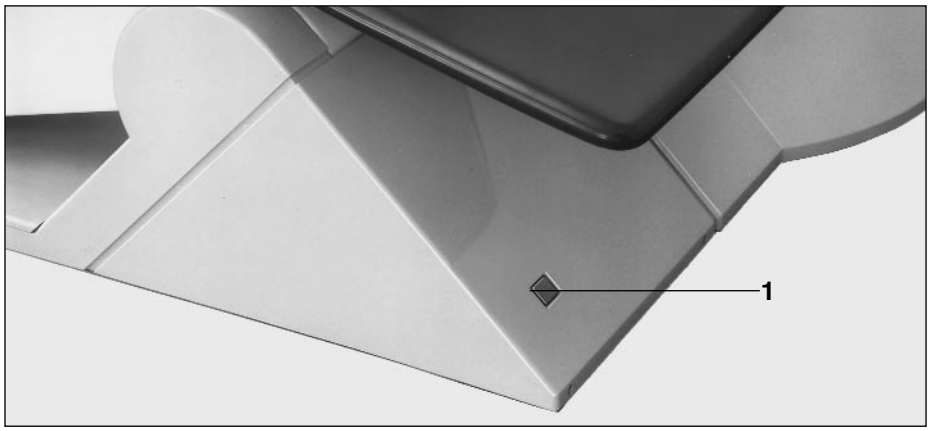
For time setting (**18**), all instruments must be in their holders:
- press key MEMO (**19**) (LED indicator must light up)
- press key MINUS (**20**) for setting the hours
- press key PLUS (**21**) for setting the minutes
- press key MEMO (**19**) (LED indicator must extinguish)

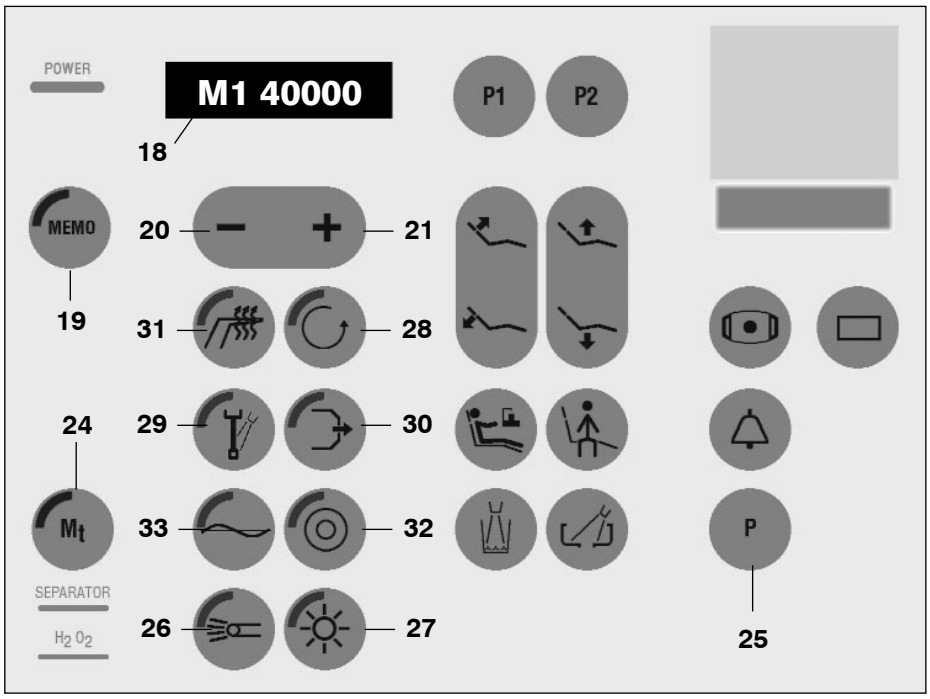
The seconds cannot be set.











The display (18) will indicate different information:

- time (when all instruments are parked)- the instrument removed from the holder (T1 = turbine 1, M1 = micromotor 1, ZEG = scaler, SP = syringe, ECH = electro-surgical handpiece).
- The preselected speed or torque limitation of the micromotor, intensity of the electro surgical unit or of the scaler, syringe heating ON. This information appears only then when the instrument is taken from its holder.

19 program preparation key (MEMO)
20,21 key for setting speed, torque limitation and intensity (also syringe heating).
24 Key, torque limitation of micromotor ON/OFF.
25 Program change-over key for instruments.

Instrument light:

26 Key, instrument light ON/OFF
LED indicator illuminated:
instrument light ON.
27 Key, intensity of instrument light MEDIUM LIGHT/MAXIMUM LIGHT
LED indicator illuminated:
instrument light at MAXIMUM LIGHT intensity.

Direction of motor rotation

28 Key, direction of micromotor rotation.
LED indicator illuminated: reverse operation of micromotor ON.

Spraywater for burr instruments

29 Key, spraywater for burr instruments ON/OFF.
LED indicator illuminated: spraywater for burr instruments ON.

Chip blower

30 Key, chip blower constantly ON during drilling operation. LED indicator illuminated: chip blower ON

Topjet syringe

31 Key, syringe heating ON/OFF. LED indicator illuminated: syringe heating ON

Ultrasonic scaler:

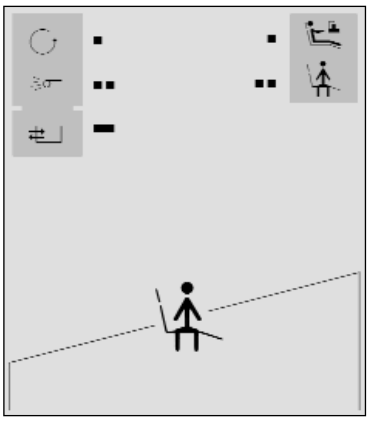
32 Key, endodontic function (root canal treatment) ON/OFF. LED indicator illuminated: endodontic function ON

Attention! The LED indicators of keys (24, 26, 27, 28, 29, 30, 31, 32, 33) are only illuminated when the instrument is taken from its holder.

Foot panel -
Functions of the different keys

All functions needed during treatment can be obtained and controlled via the keys of the foot panel.

All keys have several functions - except for the keys and .Which one of the functions is activated depends on whether you are in the chair and instrument operation or in the Ritter IBW software operation. Further details are outlined in the corrresponding sections of this operating instruction.



Symbols

■ The indicated function is obtained by one short pressure of the key

■■ The indicated function is obtained by twice shortly pressing the key

▬ The indicated function is obtained by longer pressure > 1 second of the key

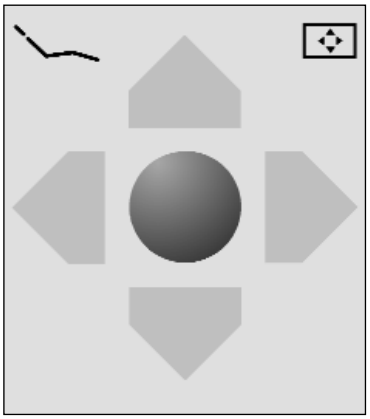
Change of direction of micromotor rotation normal / reverse rotation

Instrument illumination

No function

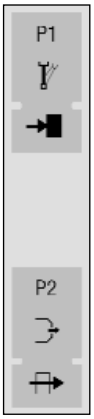
Automatic movement to rinsing position

Automatic movement to exit position



Activation of the instrument function when instrument is out of holder Infinetely variable or preset speed or automatic movement to exit position when all instruments are in their holders

Keys are for chair positioning or when working with Ritter IBW software:
Keys are for cursor control of Ritter IBW software.



P1 Automatic movement to treatment position P1

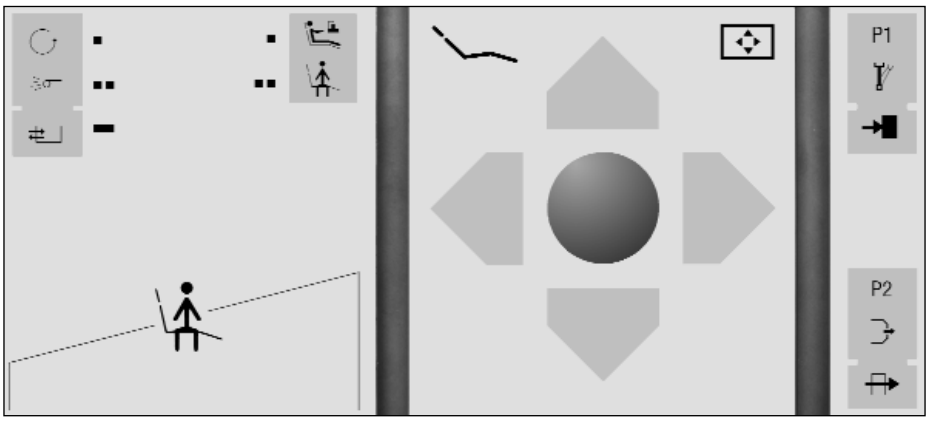
Instrument spray

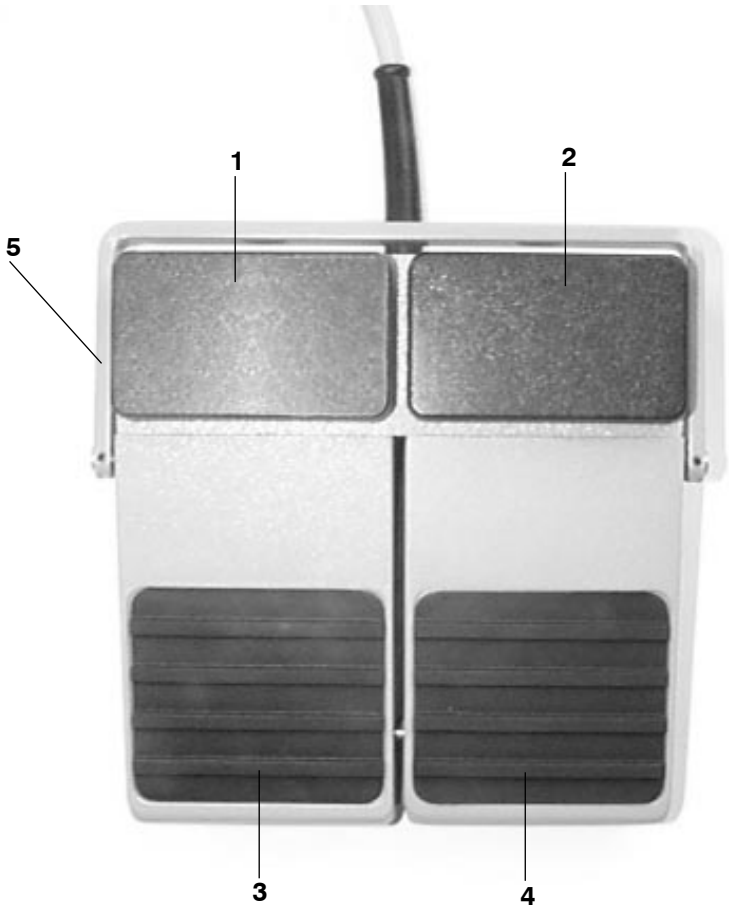
No function

P2 Automatic movement to treatment position P2

Chipblower ON (as long as key is being pressed)

No function





4-Pedal Foot Controller
Functions of the switches

As an alternative to the standard foot panel there is the also possibility to have the4-pedal foot controller.

All important functions needed duringtreatment can be obtained and controlledvia the foot controller.

Switch functions

1 when motor is taken out of its holder: change of direction of motor rotation

when Piezon is out of its holder: Endo function ON / OFF

when Topjet is out of its holder: Syringe heating ON/OFF

2 when drilling instrument is out of its holder: chip blower temporarily ON/OFF

1 + 2 when drilling instrument is out of its holder: instrument light ON/OFF

3 when drilling instrument is out of its holder: activation of instrument with spray function

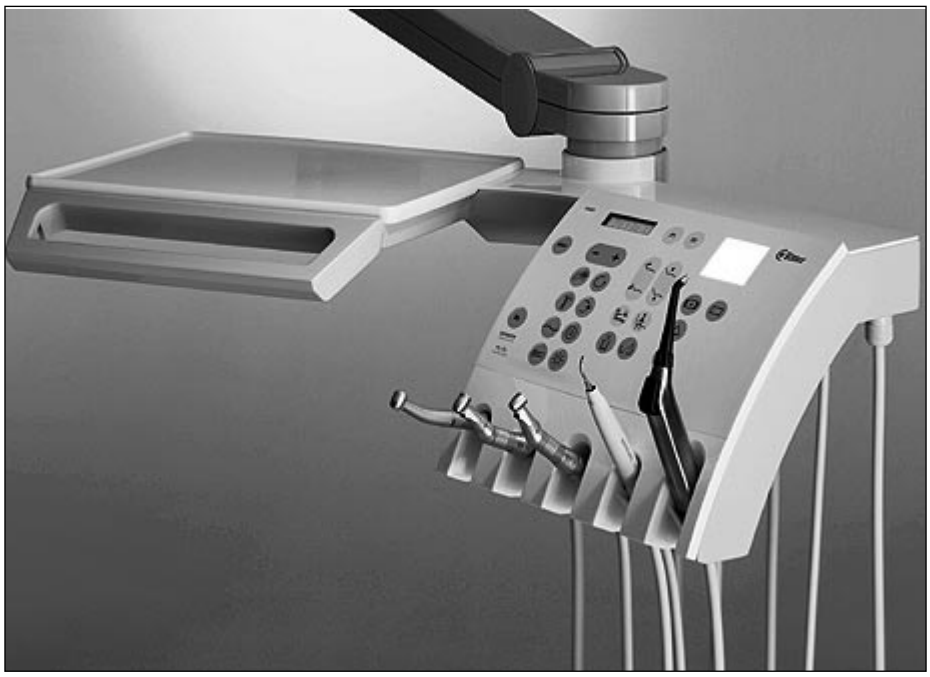
when Piezon is out of its holder: activation of scaling function

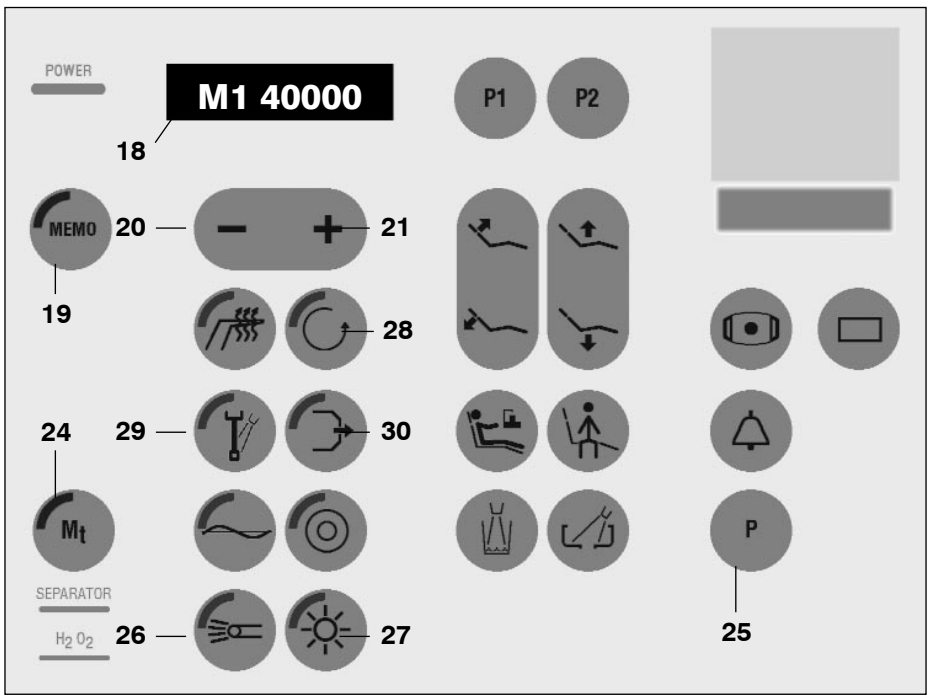
4 when drilling instrument is out of its holder: activation of drilling instrument without spray function

when Piezon is out of its holder: activation of scaling function

3 + 4 when instrument is out of its holder: same as switch 3

5 foot lever





Programming the instruments

All integrated functions can be programmed for each instrument so that they are already preselected when the instrument is taken from its holder.

Moreover, for each instrument two different programs can be stored (for two operators, for example).

- Standard Program:
  LCD indicator (**18**) does not blink.
- Alternative Program:
  LCD indicator (**18**) blinks constantly in one-second intervals.
- Changing from one program to the other is performed by pressing program change-over key (**25**) - whereby all instruments have to be in their holders.

The functions are stored individually for eachinstrument, which for this purpose must beremoved from its holder.

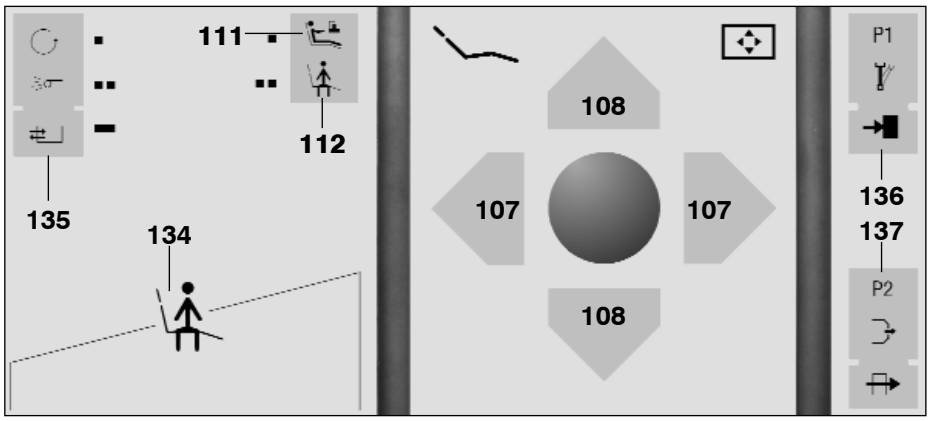
Example of program storage for micromotor Alternative Program

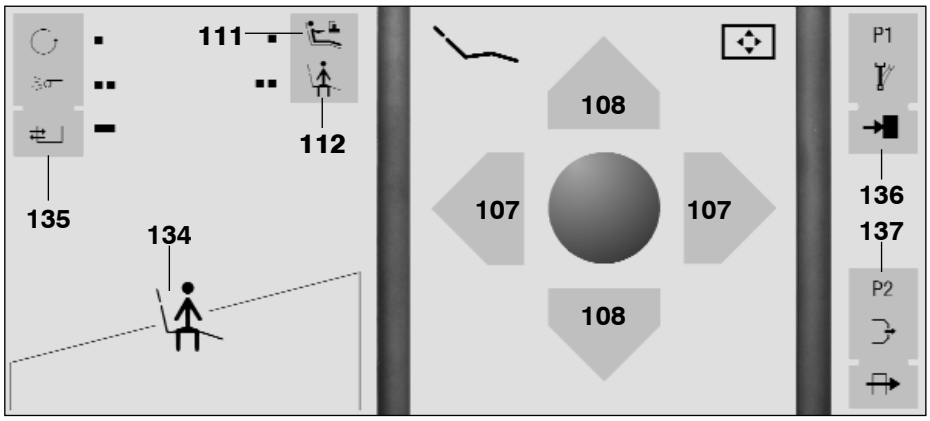
- All handpieces must be in their holders.
- Press program change-over key (**25**) to change to the Alternative Program (LCD indicator (**18**) blinks constantly in one-second intervals).
- Take handpiece from its holder. Now, press any of the desired key functions (keys **24**, **26**, **27**, **28**, **29** **30**).
- Press the PLUS or MINUS key (**20** or **2**1) to set the speed. Indicated on LCD display (1**8**).
- Program storage is completed by pressingMEMO key (1**9**) and program change-over key (**25**). Extinguishing of the LED indicator in the MEMO key confirms that the program has been stored.

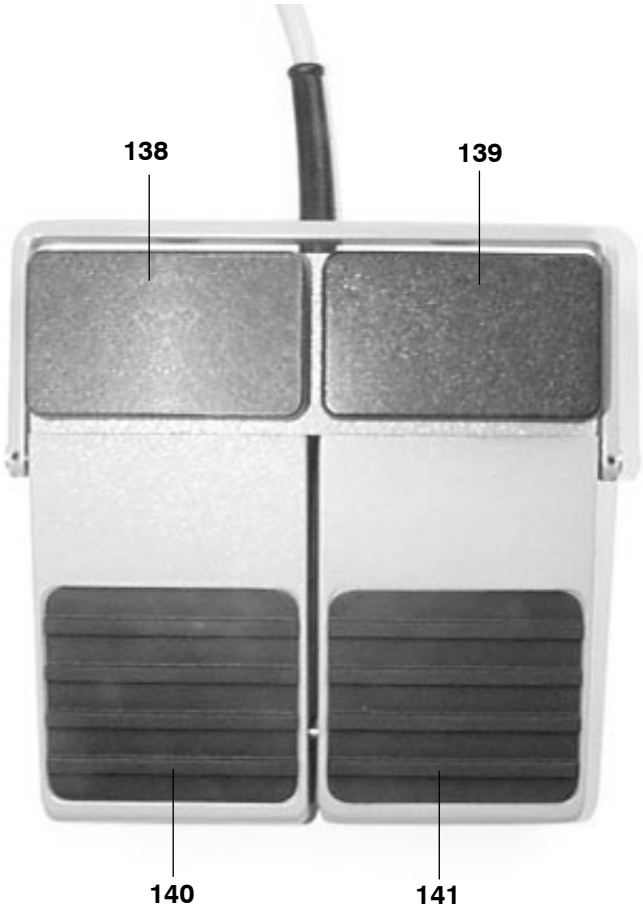
For storing the Standard Program, please proceed in the same way, however, without pressing MEMO key (1**9)** and program change-over key (**25)**.

In case that one or the other of the preselected functions of an instrument should be changed or deleted, change over to the alternative program by pressing program change-over key (25), take the handpiece from its holder and add or delete the desired function by briefly pressingthe appropriate function key. These changes, however, are maintained only until thenext change-over to the Standard Program ismade. All programmed functions are still present and unchanged after the handpiece has been returned into its holder again.

The instrument Standard Program has priority,that means, after activating the dentalwork place via the main switch the Standard Program will automatically be operative.







Functions of the foot panel

When not operating in the Ritter IBW Software and when all instruments are in their holders or when operating in the Ritter IBW Software and when **all instruments are in their holders**, respectively, and the screen indicates "Programmbedienung nicht aktiv" (program operation not active), the different keys of the foot panel have the following functions:

(**107**) backrest UP/DOWN(
(**108**) chair UP/DOWN
(**111**) move to rinsing position
(**112**) move to exit position
(**134**) move to exit position
(**135**) change to program operation
(**136**) move to treatment position P1
(**137**) move to treatment position P2

When **one instrument is removed from its holder** the keys of the foot panel have the following functions **as long as the instrument is not activated yet**:

(**107**) backrest UP/DOWN
(**108**) chair UP/DOWN
(**111**) move to rinsing position
(**112**) move to exit position
(**134**) activation of the instrument function[1)]
(**135**) change of rotation direction of motor or instrument light
(**136**) spray
(**137**) chip blower

[1)] With respect to the instruments, key (**134**) can have the function of a standard key as long as the function "Konstante Größe" (constant magnitude) is not activated. This means, infinitely variable regulation when applying pressure to this key from left to right or vice versa.

Functions of the 4-pedal-foot controller

When **all instruments are in their holders**, the pedals of the foot controller have the following functions:

(**140**), (**141**) move to exit position

When **one instrument is removed from its holder** and **is not yet activated**, the pedals of the foot controller have the following functions:

(**138**) change of rotation direction of motor, endo function, syringe heating
(**139**) chip blower (temporarily)
(**138**) + (**139**) instrument light
(**140**) activation of instrument function with water
(**141**) activation of instrument function without water

With respect to the instruments, the pedals (**140**) and (**141**) can have the function of standard foot pedals as long as the "Konstante Größe" (constant magnitude) is not activated. This means infinitely variable regulation by more or less pressure applied to the pedals.

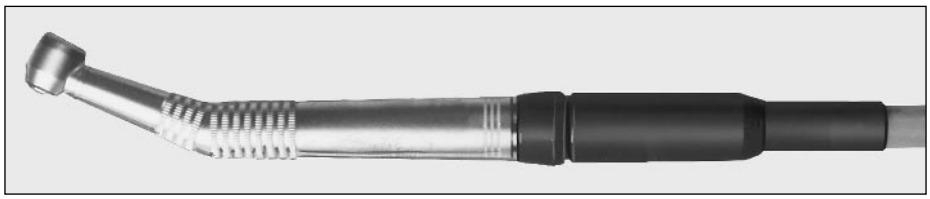
As soon as one instrument is activated via the foot pedals (134, 140 or 141) all chair movements are blocked.

Operation

Take the handpiece from its holder.

The turbine is activated via the foot panel (**34**) or the foot controller pedals (**40**, **41**).

The turbine speed appears in the LCD display (**18**) as 100 % value and cannot be changed.

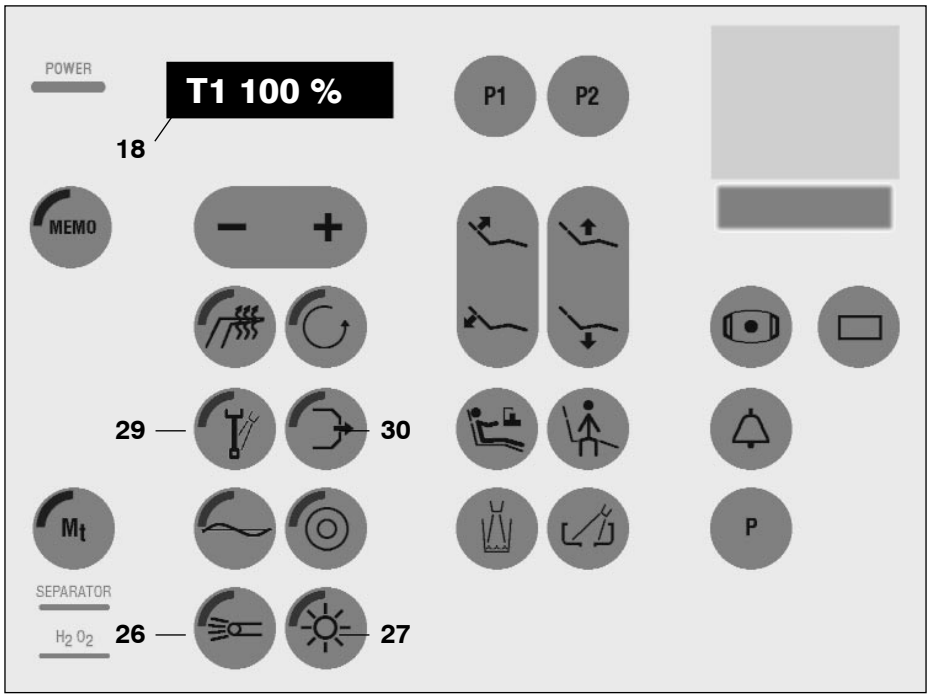


Turbine light

The turbine light is switched ON (and OFF, resp.) by key (**26**) (LED indicator illuminated). The turbine light extinguishes 5 seconds after taking the foot from the foot panel / foot controller or immediately after returning the handpiece into the holder and illuminates again when taking the handpiece from its holder and applying pressure to the foot panel (**34**) or foot controller pedals (**40**, **41**).

The light intensity can be increased by pressing key (**27**) and is confirmed by illumination of the LED indicator.

There are two degrees of light intensity:
MEDIUM intensity (**26**)
MAXIMUM intensity (**26 + 27**)



Spraywater

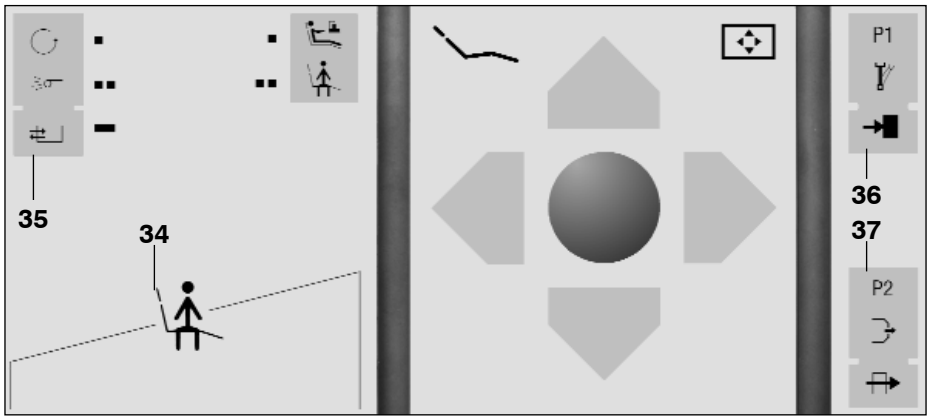
The turbine spraywater is switched on by key (**29**) LED indicator illuminates.

Chip blower

For an increased air stream and better chip removal during the drilling operation, the chip blower can be switched for continuous operation by pressing key (**30**) in the control panel.

Programmable functions

Functions of the turbine: turbine light, spraywater and continuous chip blower operation are programmable.



Foot panel

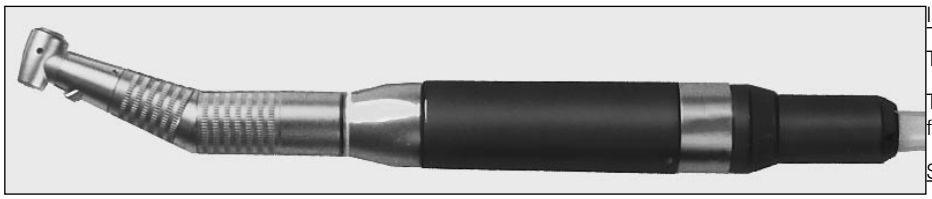
34 operation of turbine
35 pressing key twice within half a second, turbine light ON/OFF
36 key, spray ON/OFF
37 key, chip blower air only

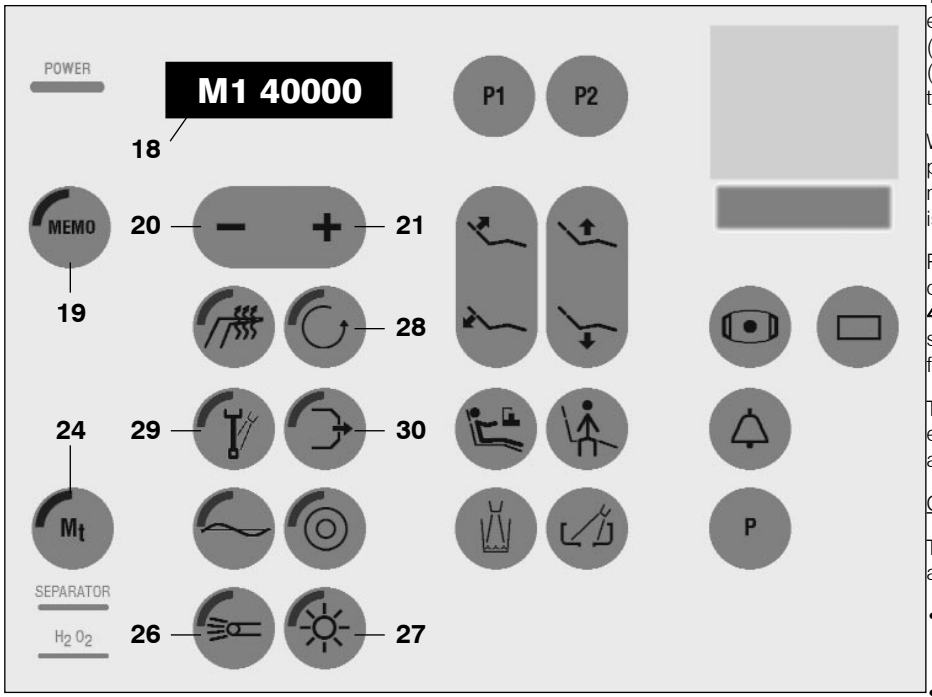
4-Pedal-foot controller

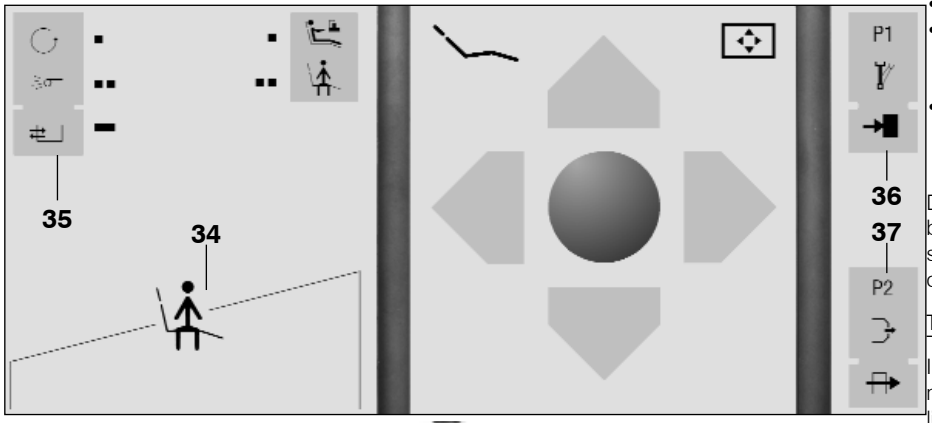
40 operation of turbine with spray
41 operation of turbine without spray
40 + **41** operation of turbine with spray
38 + **39** turbine light ON/OFF
39 chip blower

Delayed function of the chip blower when activated via the foot panel.

Important: Please read the turbine manufacturer's instructions very carefully.







IOperation

Take the handpiece from its holder.

The micromotor is activated via foot panel (**34**) or foot controller pedals (**40**, **4**1).

Speed range

The final speed of the micromotor can be preselected in 24 steps and appears in the LCD display (1**8**), where 40000 stands for the highest and 400 (KL 700 motor = 2000) for the lowest preselectable speed.

With the micromotor taken from its holder and pressing key (**20**) or (**2**1), the speed range of this micromotor changes and the last indicated value is being stored.

Pressure from left to right applied to foot panel (**34**) or more or less pressure applied to the pedals (**40**, **4**1) of the foot controller continuously changes the speed from the lowest value up to the preselected final value.

The speed range of the drilling instruments can be extended by using reducing or increasing contra-angles.

Constant Speed (MF)

The micromotor can be preset for constant speed as follows:

- Take the handpiece from its holder and press PLUS or MINUS key (**20**, **2**1) to set the desired speed.
- Press MEMO key (1**9**)
- Press reverse operation key (**28**)
- Thus, the constant speed is preset on both levels (Standard Program and Alternative Program)
- The display (1**8**) will now indicate MF (sign for constant speed) as well as the value of the preset constant speed for the instrument.

Deleting the preset constant speed is performed by taking the instrument from its holder and pressing once again MEMO key (1**9**) and reverse operation key (**28**).

Torque limitation

In order to warrant that the torque of the micromotor does not exceed a certain value, it can be limited via key (**24**).

The torque can be preselected in 13 steps and appears in the LCD display (1**8**), where 22 Nmm (KL 700 motor = 25 Nmm) stands for the highest and 10 Nmm for the lowest preselectable torque.

When the micromotor is taken from its holder and pressing key (**24**), the value of the torque can be preselected with keys (**20** or **21**) and the last indicated value is being stored.

Micromotor light (**26**, **27**)

Please refer to turbine light.

Reverse operation of the micromotor

Reverse operation of the micromotor is effected by key (**28**). LED indicator illuminates.

Spraywater

Spraywater for the micromotor is switched on via key (**29**). LED indicator illuminates.

Chip blower with continuous operation

For an increased air stream and better chip removal during the drilling operation, the chip blower can be switched for continuous operation by pressing key (**30**) in the control panel.

Programmable functions

Functions of the micromotor: speed range, torque limitation, micromotor light, reverse operation, spraywater and continuous chip blower operation are programmable.

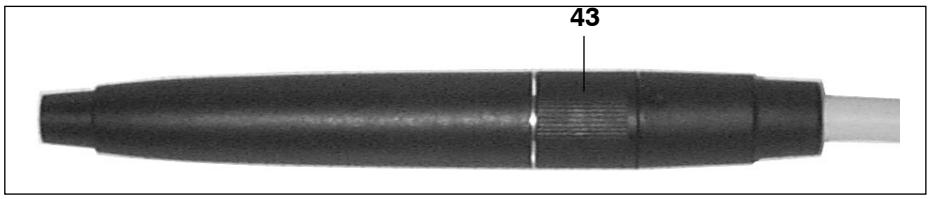
Foot panel

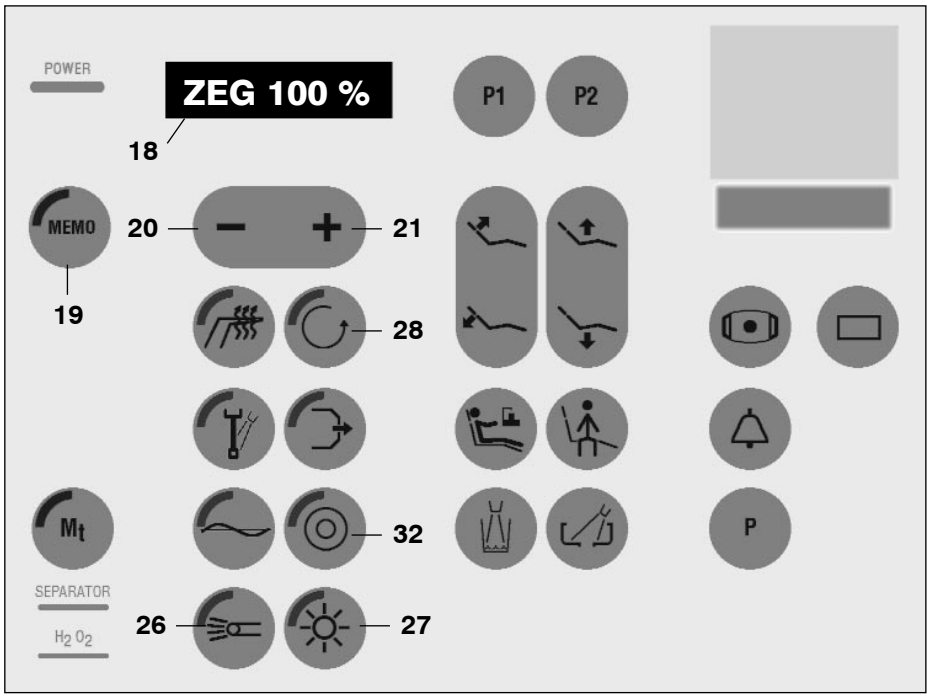
34 operation of micromotor and speed regulation
35 pressing key once:
reverse operation of micromotor ON/OFF
pressing key twice (within half a second):
instrument light ON/OFF
36 key, spray ON/OFF
37 key, chip blower, air only

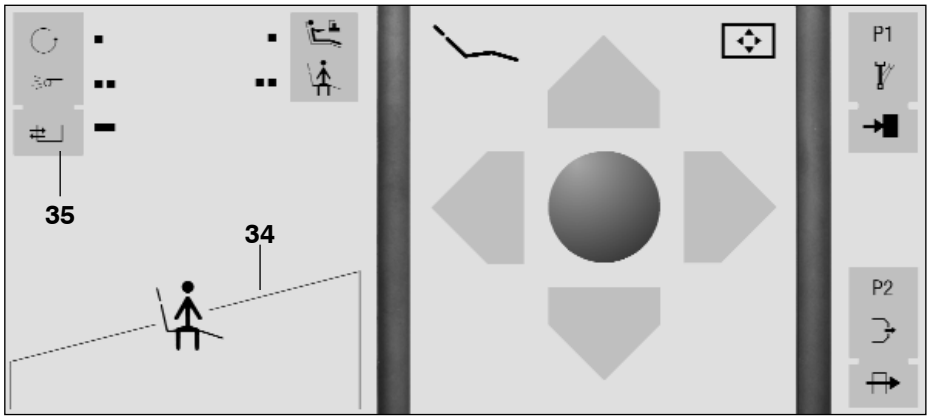
4-Pedal-foot controller

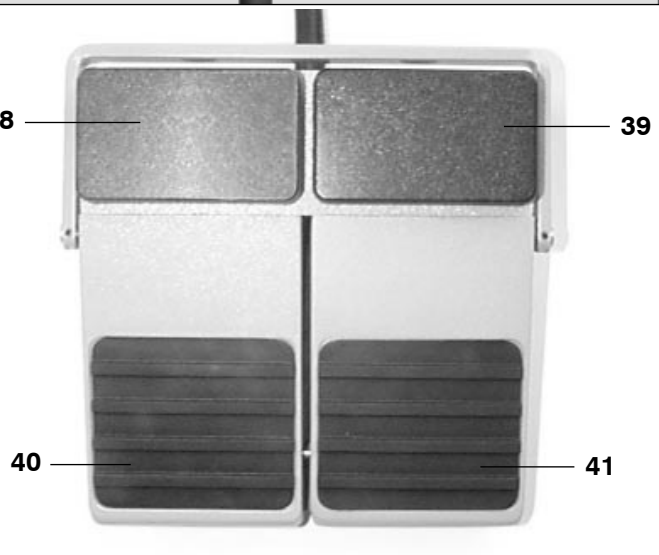
40 operation of micromotor with spray
41 operation of micromotor without spray
40 + **41** operation of micromotor with spray
38 + **39** instrument light ON/OFF
38 reverse operation of micromotor ON/OFF
39 Chip blower

Important: Please read the micromotor manufacturer's instructions very carefully.









Technical data:

mode of operation: DAB*

optionally with light

BF

More technical data and operating hints can be found in the operating instructions for the handpiece which are enclosed!

Operation

Take the handpiece from its holder.

The scaler is activated via foot panel, key (**34**) or foot controller pedals (**40**, **4**1).

*DAB = continuous operation with intermittent load. The permissible load times are adapted to the working mode of the dentist.

Intensity

The intensity of the scaler can be preselected in 5-percent-steps and appears in the LCD display (1**8**), whereby 100 % stands for the highest and 20 % for the lowest preselectable intensity.

With the handpiece taken from its holder and pressing key (**20** or **2**1), the intensity can be changed.

Pressure from left to right applied to key (**34**) of the foot panel or more or less pressure applied to the foot pedals (**40**, **4**1) continuously changes the speed from the lowest value up to the preselected final value.

Constant Intensity (ZF)

The ultrasonic scaler can be preset for constant intensity:

- Take the handpiece from its holder and press PLUS or MINUS key (**20**, **2**1) to set the desired intensity.
- Press MEMO key (1**9**)
- Press reverse operation key (**28**)
- Thus, the constant intensity is preset on both levels (Standard Program and Alternative Program)
- The display (1**8**) will now indicate ZF (sign for constant intensity) as well as the value of the chosen preset constant intensity.

Deleting the preset constant intensity is performed by taking the instrument from its holder and pressing once again MEMO key (**19**) and reverse operation key (**28**).

Endo Function

The endodontic function (root canal treatment) is activated by key (**32**). LED indicator illuminates.

Water regulation

For water regulation, the scaler Piezon PZ is provided with a knurled nut (**33**) on the handpiece.

Handpiece light (**26, 27**)

visit to turbine light

Programmable functions

Functions of the scaler: intensity and Endo function are programmable.

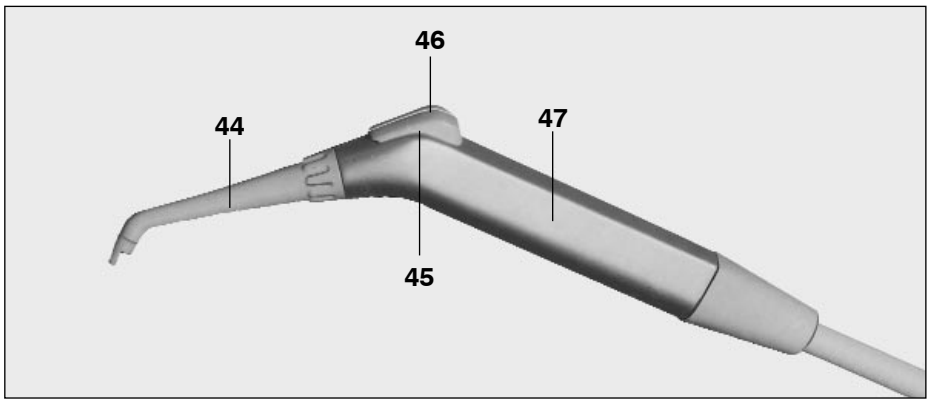
Foot panel

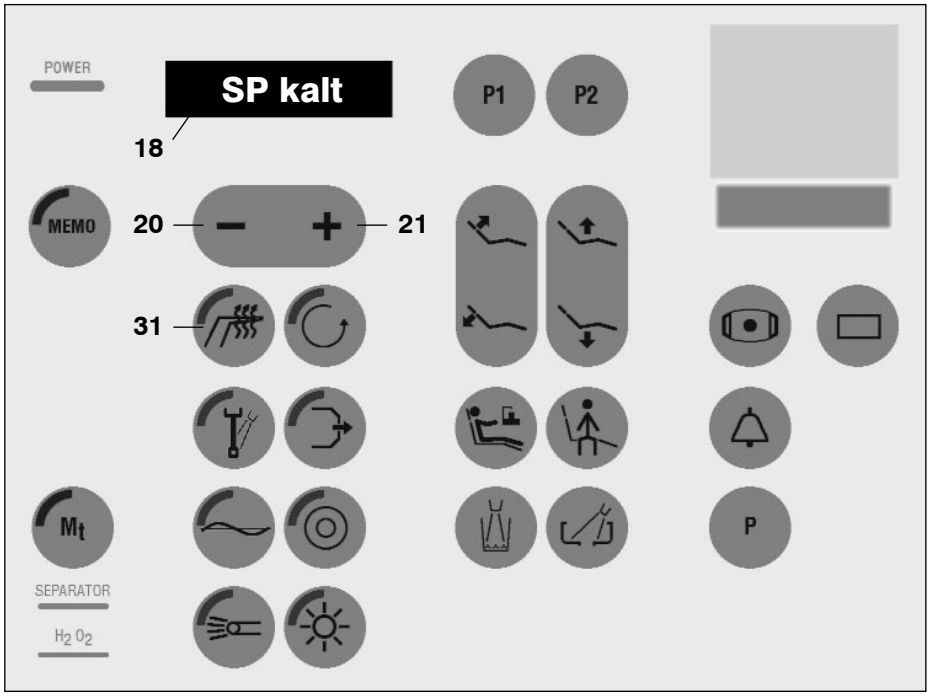
34 Operation of the scaler and intensity regulation.
35 pressing key twice within half a second, handpiece light ON/OFF

4-Pedal foot controller

40 or/and **41** operation of the scaler
38 Endo function ON/OFF
38 + **39** handpiece light ON/OFF

Important: Please read the manufacturer's instructions for the ultrasonic scaler very carefully.





Main characteristics

The Topjet syringe is very handy. Due to its design, it allows good access to all jaw quadrants. The syringe tip (**39**) is rotatable.

Operation

Water, air or spray are controlled manually Supply of the media lasts as long as the corresponding key of handle (**47**) is epressed. Either air (**45**) or water (**46**) can be obtained by actuating the corresponding key. Actuating both keys (**45** + **46**) at the same time will supply spray. After switching on the heating (**3**1), warm air, warm water or warm spray are available.

Syringe heating (20 % - 100 %)

The LCD display (1**8**) indicates syring heating ON/OFF. The temperature of the syringe heating can be set in 5 steps. The display (1**8**) indicates the following signs:

- - - -
- -
- +/-
- +
- +++

Whereby the last step indicates the highest possible temperature of the media (air, water, spray).

Volume

The volume of air, water and spray depends on the force applied to the keys during operation.

Programmable functions

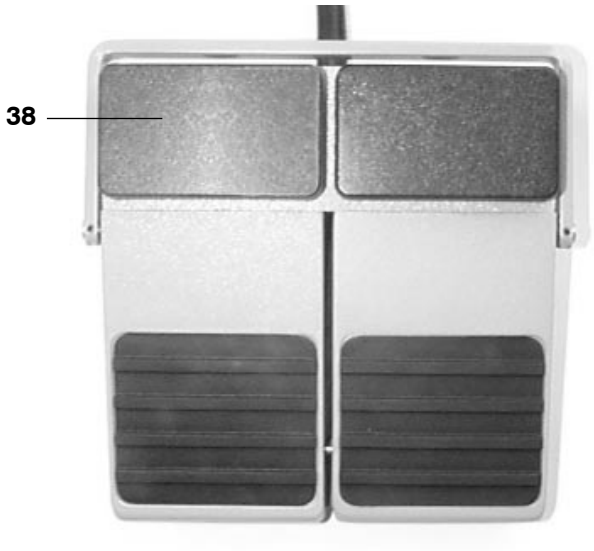
Heating ON and temperature degree.

Notes:

After activating the dentist's unit (for example in the morning), the syringe heating is always OFF.

4-Pedal foot controller

38 syringe heating ON/OFF.



Technical Data

supply voltage:	33V DC
rated input:	75 VA
rated frequency:	500 kHz ± 10 %
max. HF-rated capacity:	50 W / 400 W
mode of operation:	DAB(ED=25 %)*

Operation

Take the handpiece from its holder. The electro-surgical handpiece is activated via the key (**34**) of the foot panel or pedal (**40**, **41**) of the foot controller.

*DAB = continuous operation with intermittent load. In case of an operation of 25 % this corresponds for instance 6 sec. OPERATING TIME - 15 sec. PAUSE.

Intensity

The intensity of the electro-surgical unit can be preselected in 5-percent-steps and appears in the LCD display (1**8**), whereby 100 % stands for the highest and 20 % for the lowest preselectable intensity.

With the handpiece taken from its holder and pressing key (**20** or **21**), the intensity can be changed. Pressure from left to right applied to key (**34**) of the foot panel or more or less pressure to pedals (**40**, **41**) of the 4-pedal foot controller continuously changes the speed from the lowest value up to the preselected final value.

Constant Intensity

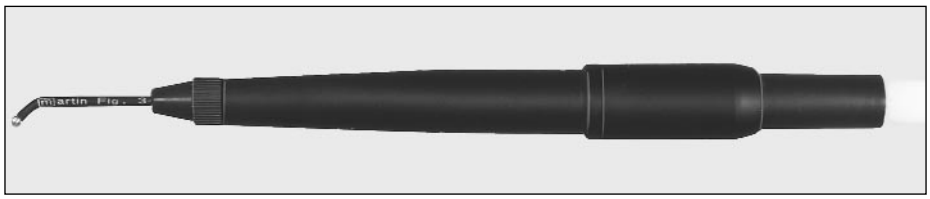
The electro-surgical unit can be preset for constant intensity:

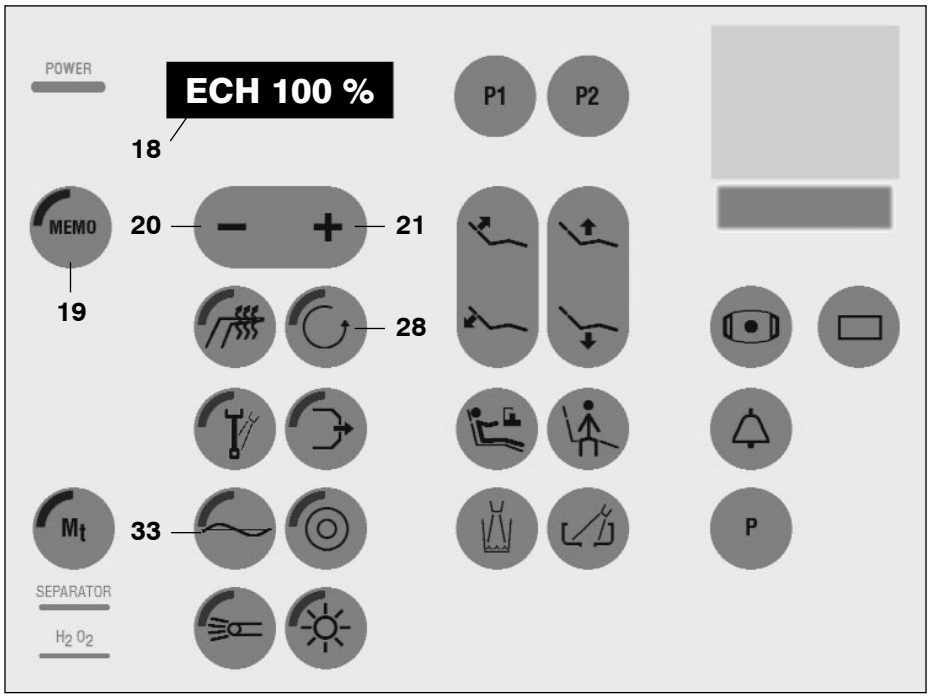
- Take the handpiece from its holder and press PLUS or MINUS key (**20**, **21**) to set the desired intensity.
- Press MEMO key (1**9**)
- Press reverse operation key (**28**)
- Thus, the constant intensity is preset on both levels (Standard Program and Alternative Program).
- The display (1**8**) now indicates EF sign for contant intensity) as well as the value of the chosen preset contant intensity.

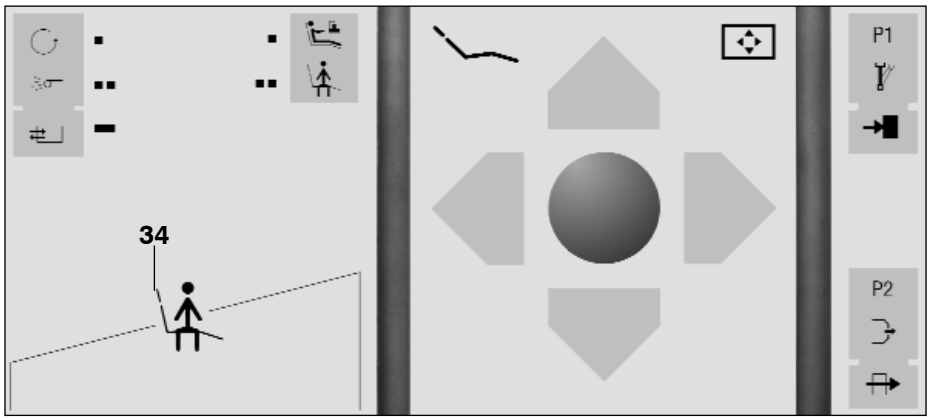
Deleting the preset constant intensity is performed by taking the instrument from its holder and pressing once again MEMO key (1**9**) and reverse operation key (**28**).

Automatic operation

For automatic operation of the electro-surgical unit press key (**33**). LED indicator illuminated.







Operating hints

The high frequency electro-surgical unit Elektrotom 190 is for operation without neutral electrode.

In order to prevent burs, special attention has to be paid that there is not contact between patient and power activated metal parts of the patient chair. It may be possible that heat is generated in such areas. Therefore, the patient is to be advised to put his hands on his lap.

A visual inspection of the accessories and the ahndpiece with instrument hose must be performed very frequently in order to detect early any defects and to have them repaired by a service technician.

Attention: It is possible that during operating the hifh frequency electro-surgical unit the functions of other electronic equipment is interfered.

Cardiac Pacemaker

Special attention has to be paid during treatment of patients with a cardiac pacemaker. Due to the high freequency current the cardiac pacemaker can be irritated and cause arhythms.

Programmable functions

Programmable functions of the electro-surgical unit: intensity and automatic operation.

Foot panel

34 operation of the electro-surgical unit and intensity regulation.

4-Pedal foot controller

40 and/or **4**1 operation of the electro-surgical unit and intensity regulation.

External electro-surgical unit

In case of an external electro-surgical unit, the functions of the dental unit have to be set out of order. Pressing the key (**33**) blocks any actions of the dental work place. Pressing key (**33**) once more, will release the blockade.

Important: Please read the manufacturer's instructions very carefully.

Optionally, the dentist's unit can be equipped with X-ray viewer D558 (**50**).

The X-ray viewer has an illuminated panoramic screen of 29 cm x 12.5 cm and is mounted to the carrier arm of the tray table (**5**1).

Main Characteristics

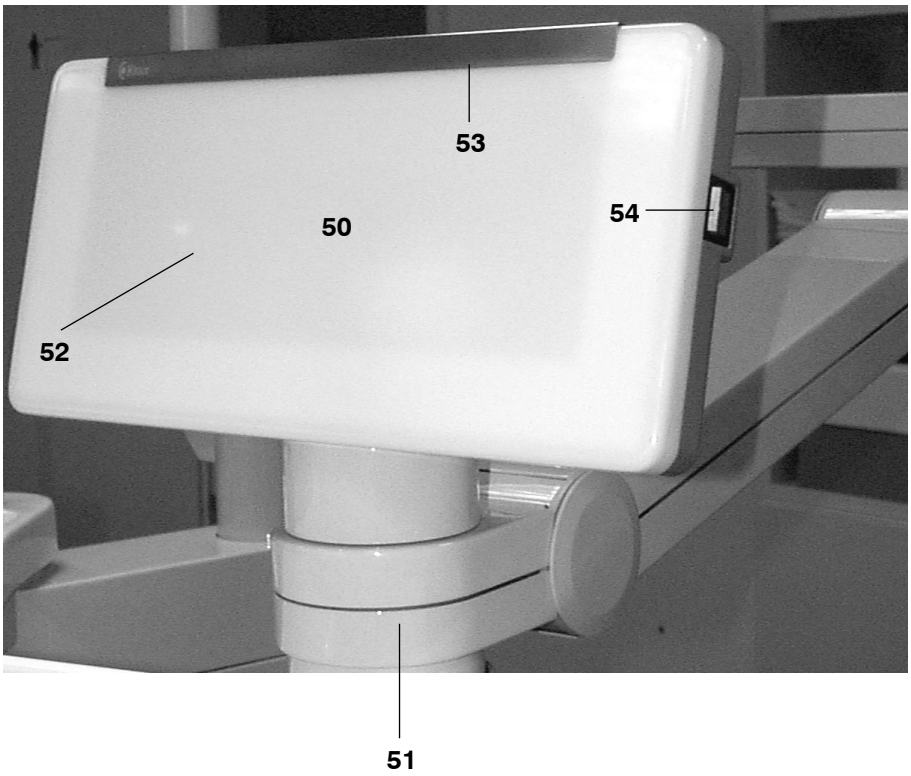
- horizontally movable by 90 °.
- uniform illumination of the screen with a powerful light of 12,000 Lux
- the screen is inclined by 15 o which allows optimum posture and best vision for the operator.
- easy to clean due to its rounded shape.

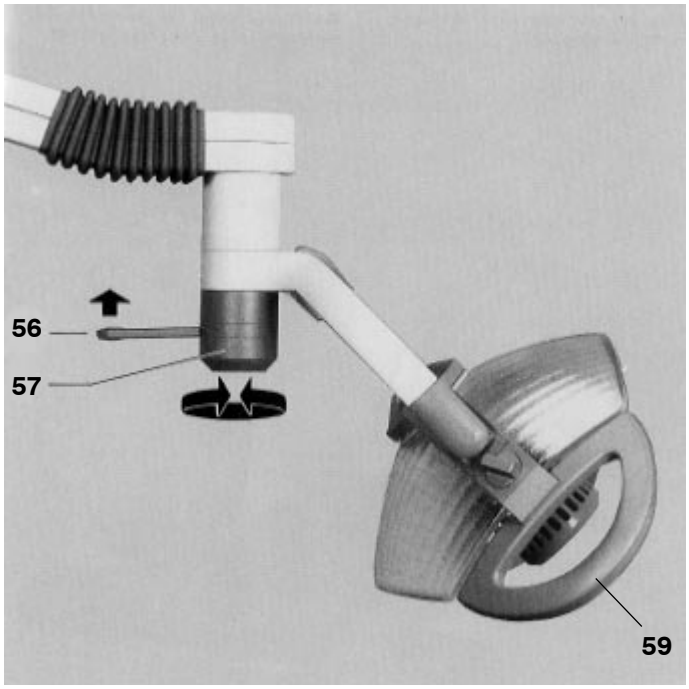
Control elements

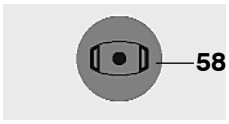
52 screen
53 film holder
54 switch

Operation

Switch (**54**) ON/OFF when the dental work place is switched ON.







Optionally, the dental working place can be equipped with a dental operating light Starlite D428U (**55**).

Operating light with facet reflector (and 24 V / 150 W halogen bulb) on flexarm mounted to assistant's unit.

The main characteristics are:

- powerful light with shadow reduction
- easy to position does not drift out of position
- removable handles

Operation elements

56 lever switch

57 dimmer

58 key for operating light at dentist's and/or assistant's control panel

59 handle

Operation

When the dental working place is switched ON the operating light can be switched ON and OFF either via lever switch (**56**) or key (**58**).

Attention! The operating light illuminates only than when both switches (**56**) and (**58**) are in ON position. For switching OFF the operating light operation of only one switch is sufficient.

Light intensity

The desired light intensity from 8,000 up to 22,000 Lux can be infinitely varied by turning the dimmer (**57**). The illuminated field is 10 x 20 cm (illuminated field and intensity are measured at a distance of 80 cm to the reflector).

Ritter Contact D720

Dental patient chair
- Operating instructions

Ritter Concept GmbH
Bahnhofstraße 65, 08297 Zwönitz

Fon: 037754/13-0, Fax: 037754/13-342

e-mail: info@ritterconcept.de
Internet: http://www.ritterconcept.de

Ritter
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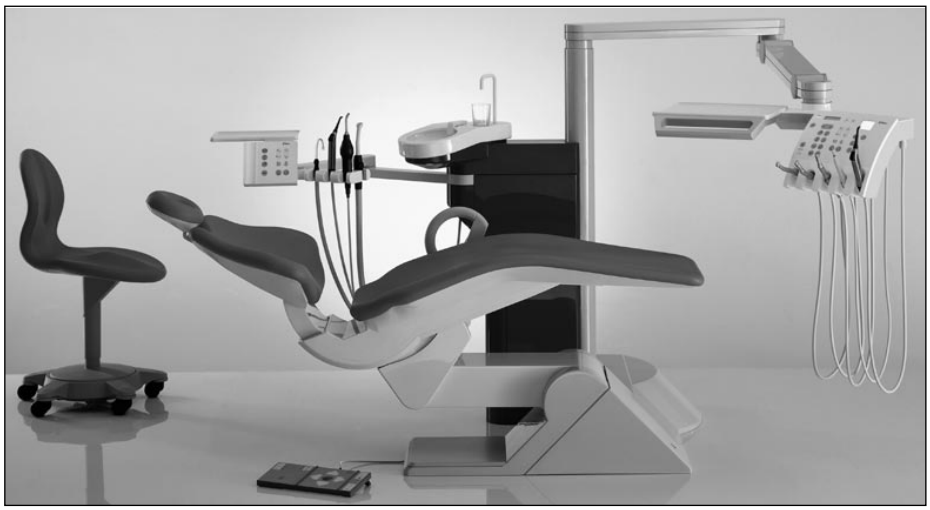


We recommend you to read this service manual very carefully in order to have full knowledge of all the advantages this chair is offering you.

Contact D720, Patient Chair

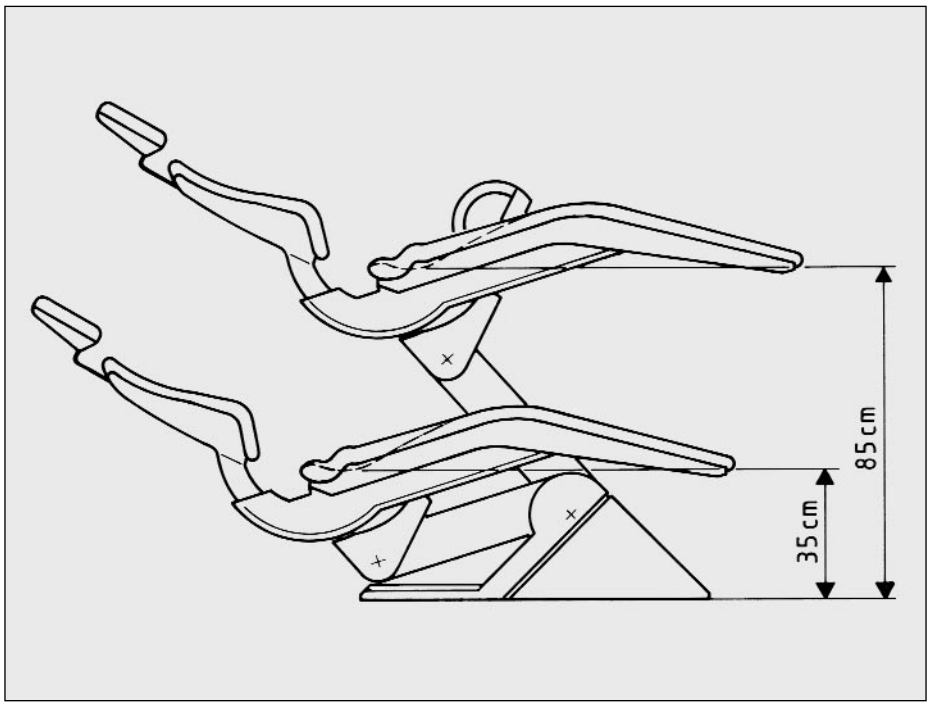
Free programmable motor chair for dentists and orthodontists.

The main characteristics are:

- quickset programming for four chair positions
- maintenance-free spindle motors, very reliable and extremely quiet
- great height adjustment for working in sitting or standing position
- large adjustment range of backrest for reclined and upright backrest position
- backrest with integrated arm support
- slim backrest for more leg room
- comfortable seat portion, soft and anatomically shaped
- small, round head support, enables the dentist to get even closer to the patient (standard type).
  As an option: Longish head support and children's head wedge.
- large adjustment angle of head support for easier treatment of upper and lower jaw
- recessed backrest portion for head support to allow better support of small patients
- handgrip for patient
- operation of patient chair either manually via dentist's unit and assistant's unit or via the foot panel or the optional pilot foot switch
- safety stops, in order to avoid the hazards of injury, especially during programmed operations

Technical modifications reserved.

The patient chair allows the dentist to work either sitting or standing.

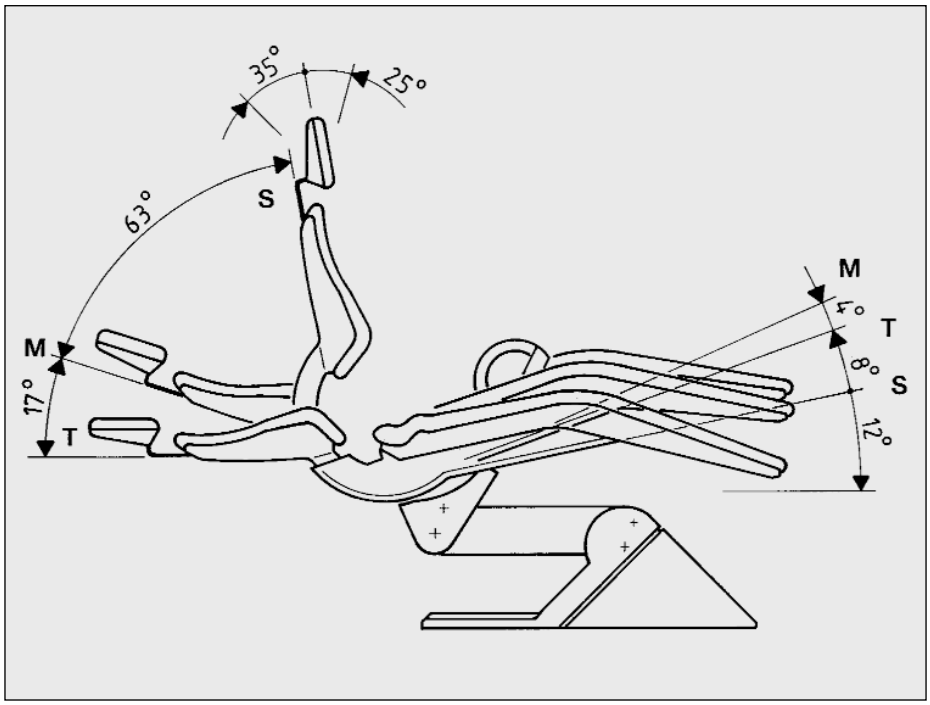


Differentiated movement between backrest inclination and seat inclination, mechanically coupled.

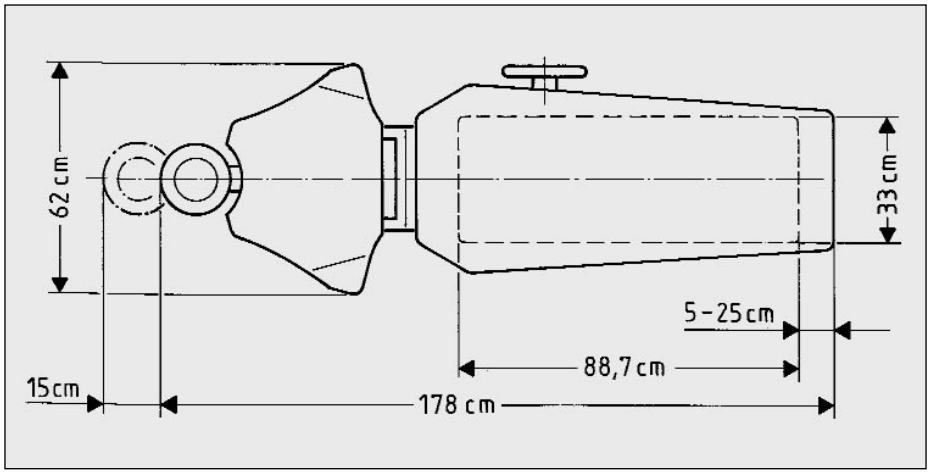
S highest backrest position

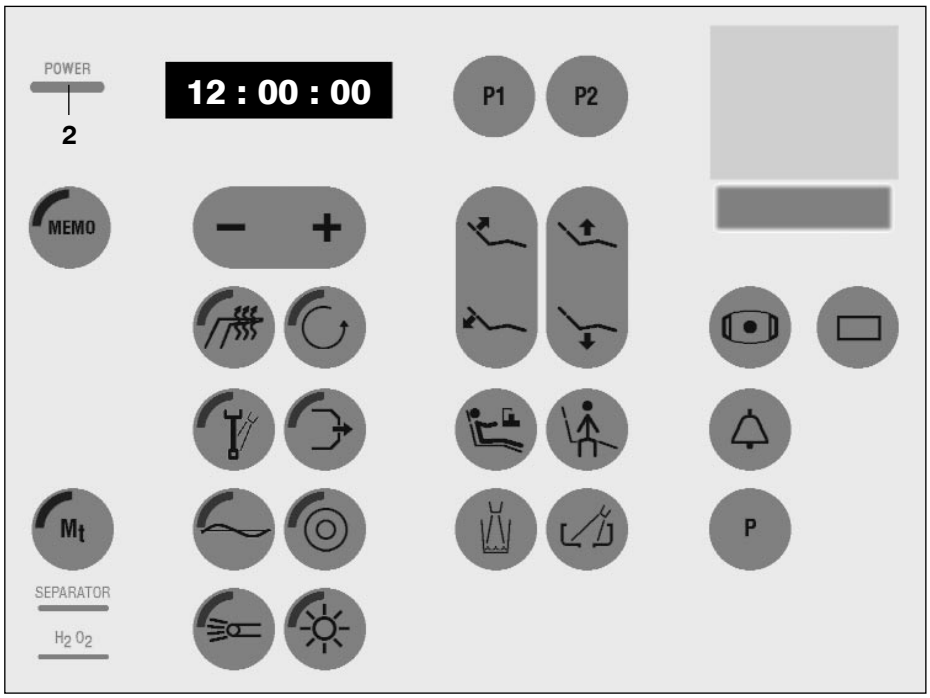
M medium backrest position

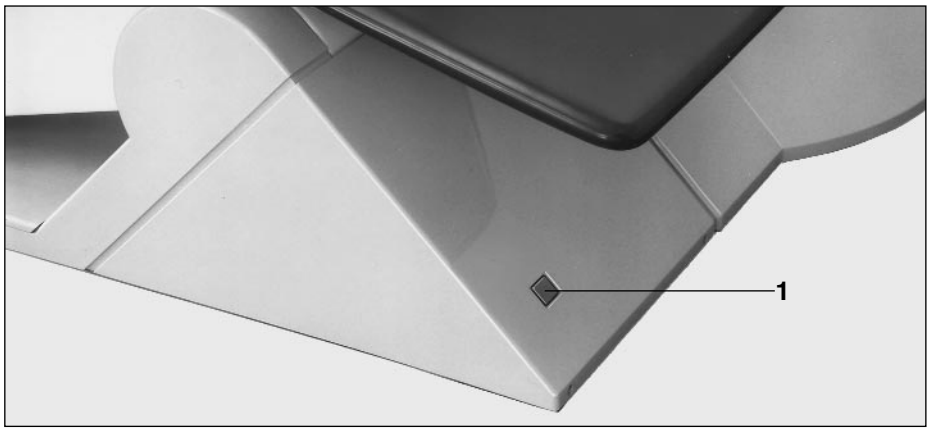
T lowest backrest position



Dimensions of patient chair







Operation

The chair is activated via the main switch (1) in the chair pedestal. In ON-position, the main switch pilot lamp and the LED indicator (**2**) in the control panel illuminate.

Important: For safety reasons, shut-off the main switch in the chair pedestal when leaving the surgery.

Control elements

The patient chair can be controlled from the dentist's side (control panel of dentist's unit), from the assistant's side (control panel of assistant's unit) and via the foot panel or pilot foot switch.

Important: The patient chair is blocked in all its functions even if pressure is applied to foot panel or pilot foot switch when any of the handpieces is taken from the instrument holder (except for the syringe).

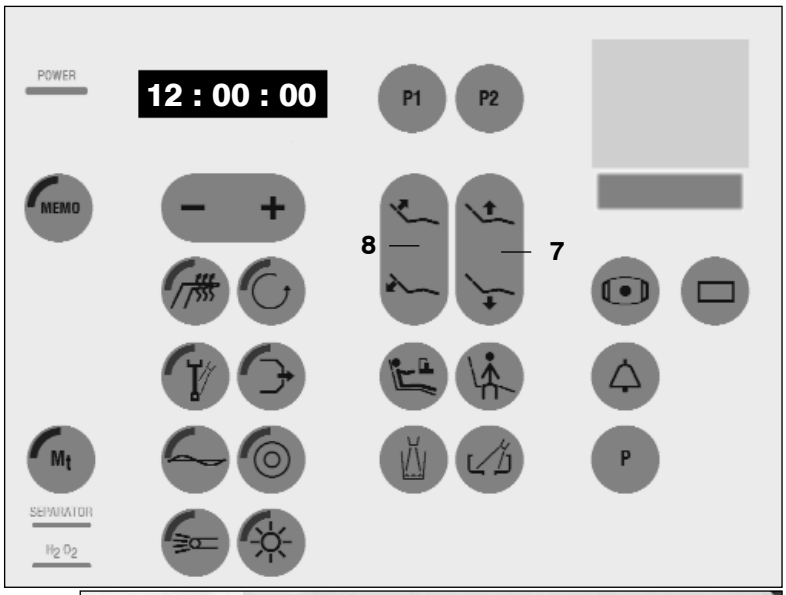
Manual control

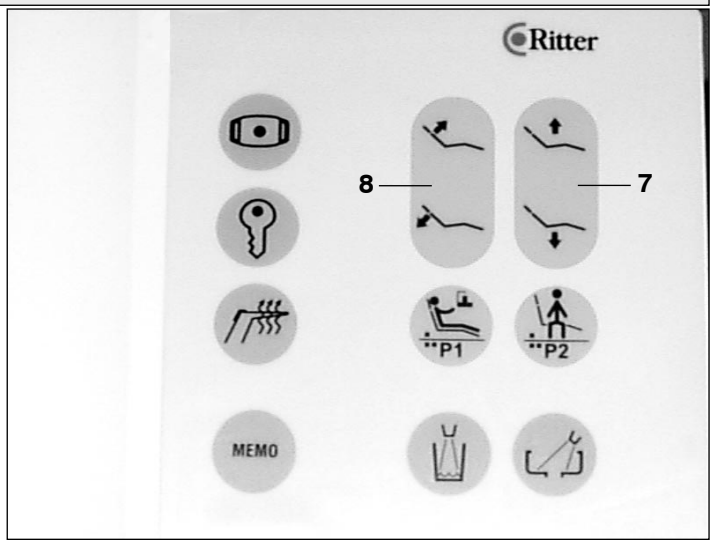
The patient chair is controlled manually by keys (**7**, **8**) and can be brought into any desired position.

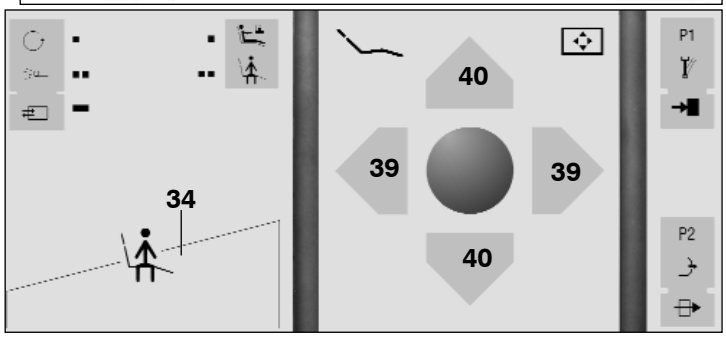
The arrows on the keys indicate the direction of the chair movement.

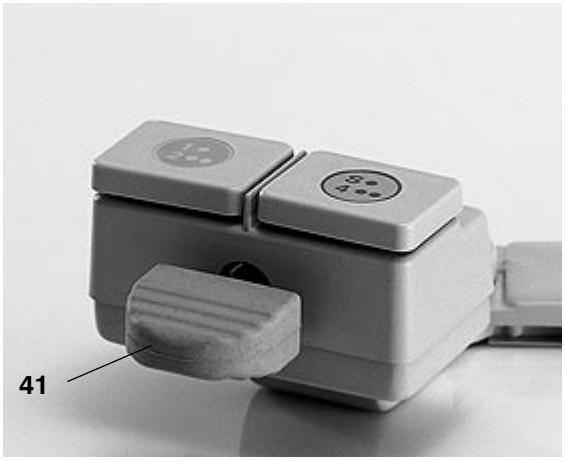
The patient chair can also be controlled via the foot panel keys (**39**/**40**).

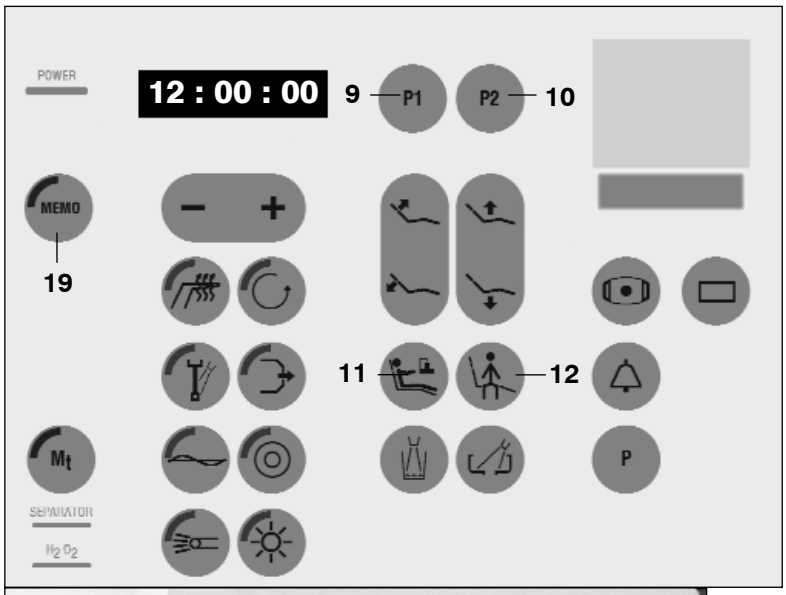
If the patient chair is equipped with a pilot foot switch it can be positioned via the foot lever (**41**). Moving the lever to the right or left, respectively, effects up or down movement of the backrest. Moving the lever up or down, respectively,effects up or down movement of the chair.

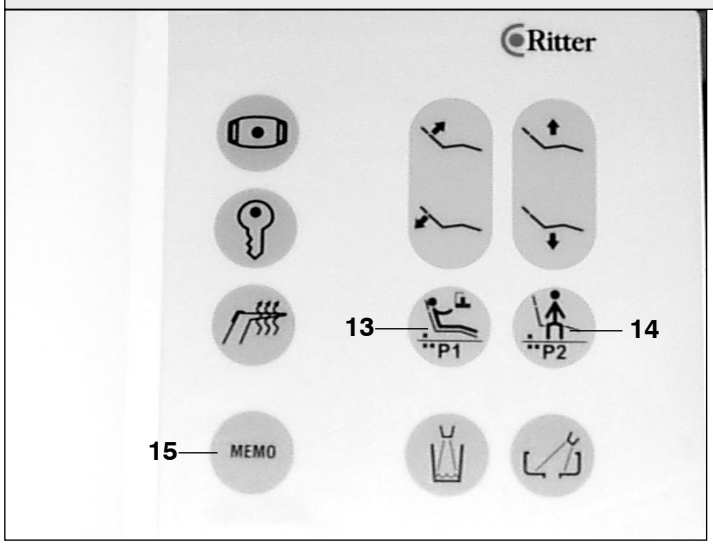


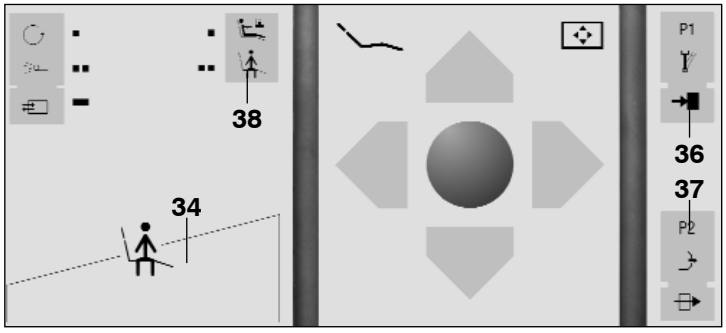


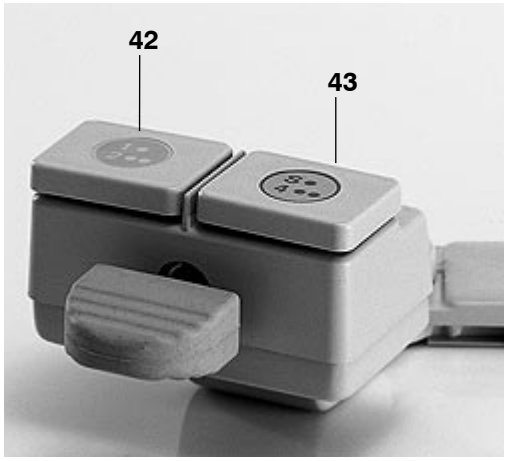












Program control

The patient chair is provided with 4 programs, i.e., 4 different chair positions can be stored and called automatically.

- treatment position P1, key (**9**) or (1**3**) twice or (**36**) or (**42**)
- treatment position P2, key (1**0**) or (1**4**) twice or (**37**) or (**42**) twice
- mouth rinse position, key (11) or (1**3**) or (**38**) or (**43**). When pressing again one of these keys, the patient chair returns to its last treatment position.
- Exit position, press twice key (1**2**) or (1**4**) or (**38**) or (**43**) twice

The chair moves also to exit position when briefly pressing foot panel (**34**) or pedal (**44**), however, only when all instruments are in their holders.

Important: Any automatic movement will be interrupted immediately when any one of the keys is pressed.

Programming the chair positions

Storing of the automatic chair positions via the control panel of the dentist's unit.

Please proceed as follows:

- Bring the patient chair manually into the desired position.
- Press MEMO key (1**9**). LED indicator illuminates.
- Press one of the four program keys (**9**, 1**0**, 11, 1**2**). Extinguishing of the MEMO key LED indicator confirms storage of the program. Storing of the automatic chair positions via the control panel of the assistant's unit.

Please proceed as follows:

- Bring the patient chair manually into the desired position.
- Press MEMO key (1**5**) and hold depressed.- Now, one of the two program keys (1**3**, 1**4**) is being pressed once or twice, respectively, after that, stop all pressure on keys.

The so stored program can now be called by pressing the appropriate key.

The stored programs P1 and P2 can also be called via the foot panel keys (**36**) and (**37**) however, only when all instruments are in their holders (keys with double function).

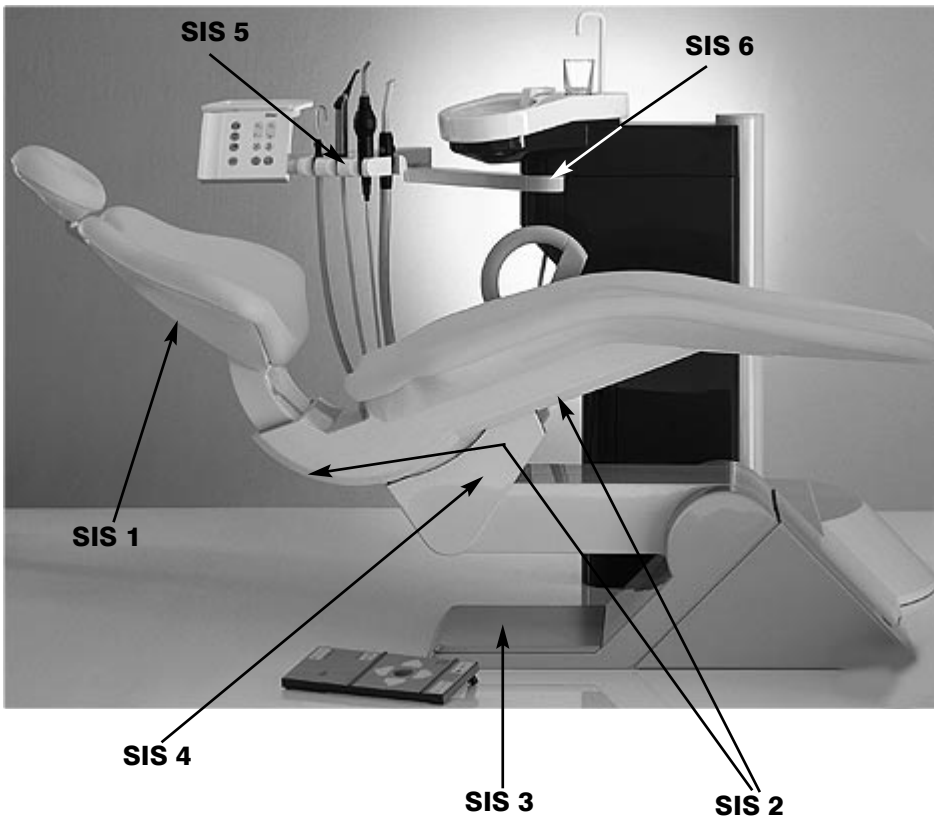
Safety stops

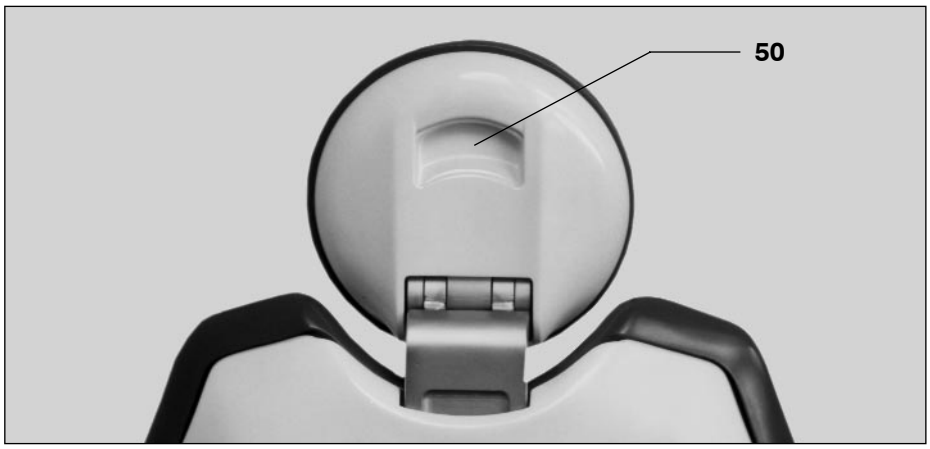
In order to avoid the hazard of injuries, backrest (SIS 1), rear side of the seat (SIS 2) as well as the yoke housing (SIS 4) are so designed that upon interference their downward movement stops and reverses into an upward movement of approx. 30 ... 40 mm.

The back end plate of the chair pedestal (SIS 3) too is provided with microswitches to stop the downward chair movement when acidentally placing the foot on it.

The instrument holder (SIS 5) of the assistant's unit also reacts to chair contact by stopping the chair movement.

A safety stop in the hinged arm of the assistant's unit (SIS 6) will stop the chair upward movment, if the arm is accidentally swivelled too far into chair direction.



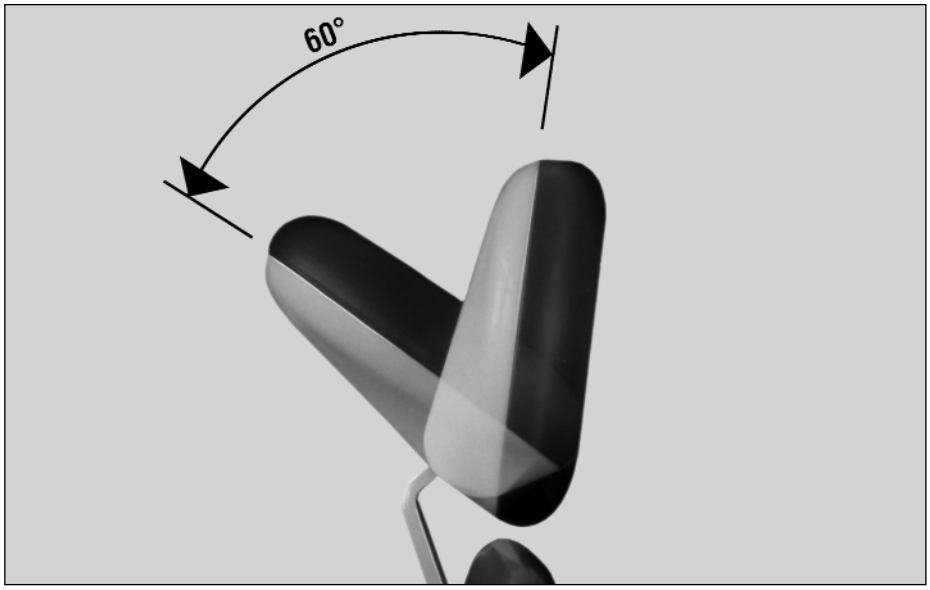


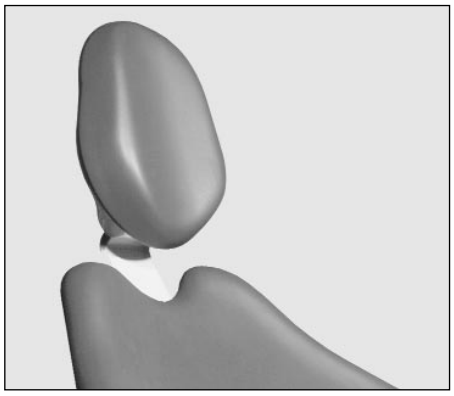
Head support

Extension and tilting of the head support can

be easily performed with one hand only. The height adjustment of the head support is infinitely variable (self-locking). The extension length is approx. 15 cm.

For tilting backwards, locking device (**50**) has to be released by pulling.Tilting forwards can be performed without pulling the locking device. The head support can be taken off and inserted again without problems.





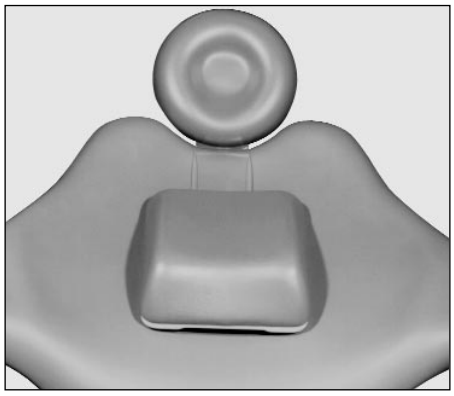
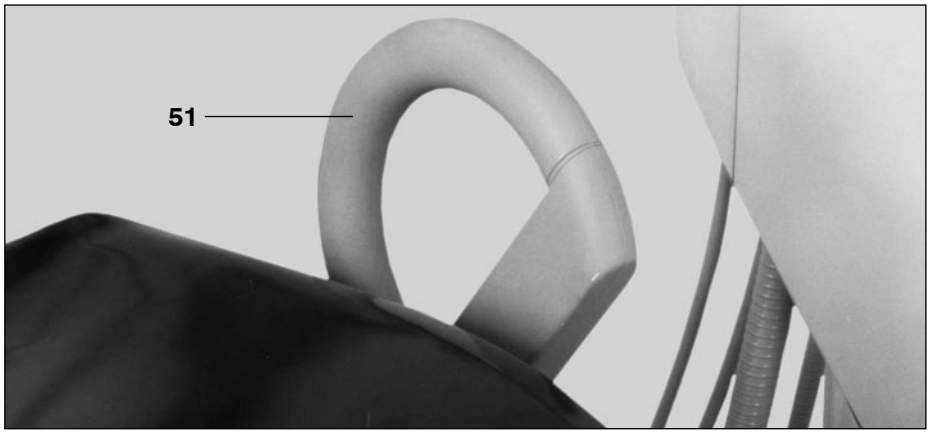


Illustration on the left:
Longish head support

Illustration on the right:
Standard head support and children's head wedge

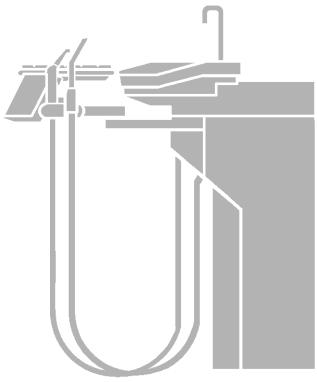


Handgrip

The handgrip (**51**) supports the patient when mouth rinsing.

Ritter Contact D720

Assistant's Unit
Operating instructions



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Water Disinfection System WES D628 63
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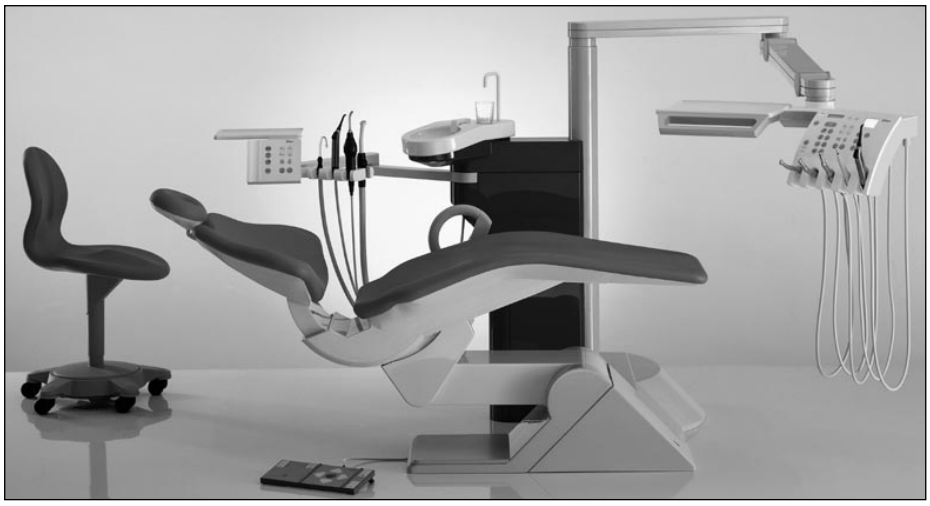


We recommend you to read this service Manual very carefully in order to have full knowledge of all the advantages this assistant's unit is offering you.

Contact D720 Assistant's Unit

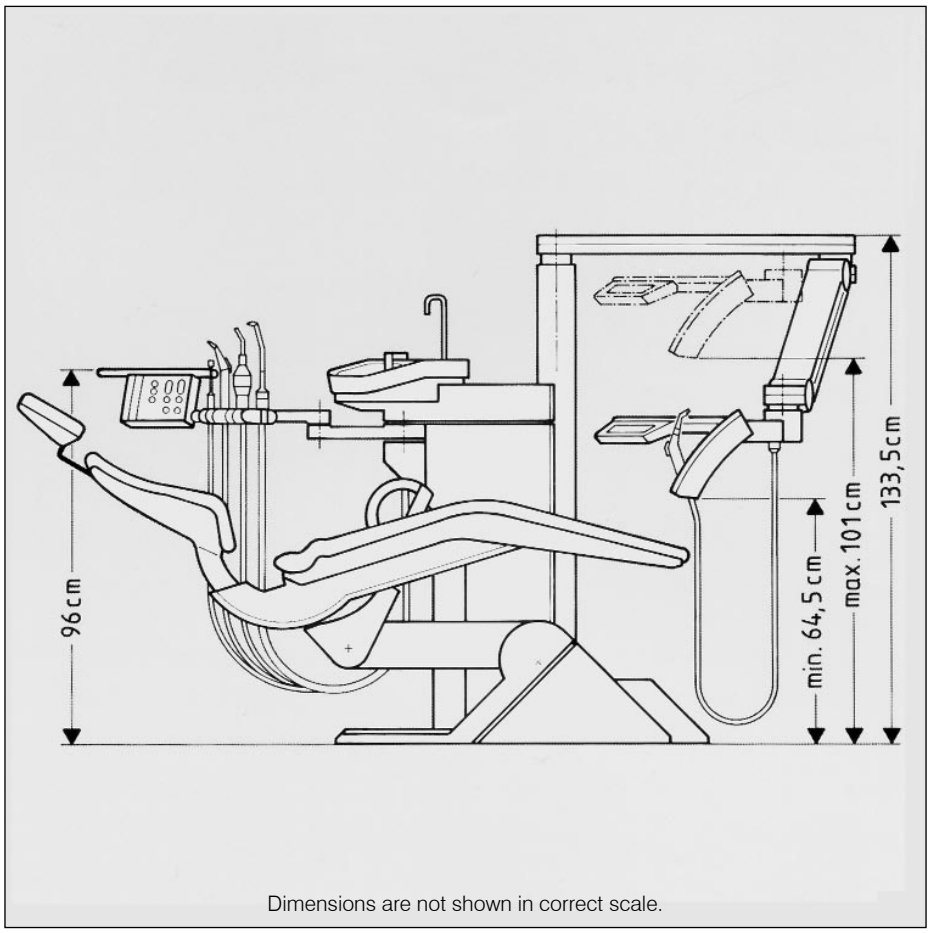
Cuspidor fully integrated in unit column.Instruments on swivel arm.Optionally, hygiene system H1 for permanent decontamination and disinfection of suction hoses.Built-in amalgam separator (as an option).

The main characteristics are:

- Ceramic cuspidor bowl, with a fastness of colour and scratch resistance
- Cuspidor bowl plugged in easy to remove for cleaning
- Simple maintenance of amalgam separator, easily accessible via an opening
- Safety for the patient due to permanent disinfection of the suction hoses
- Automatic cup filling. Plastic cup is recognized by optical sensors.
- Instrumentation on swivel arm holder with double articulation with an extreme wide working radius (enables the dentist to work without an assistant)
- Tray table for assistant
- Control panel for assistant
- Safety switch in swivel arm

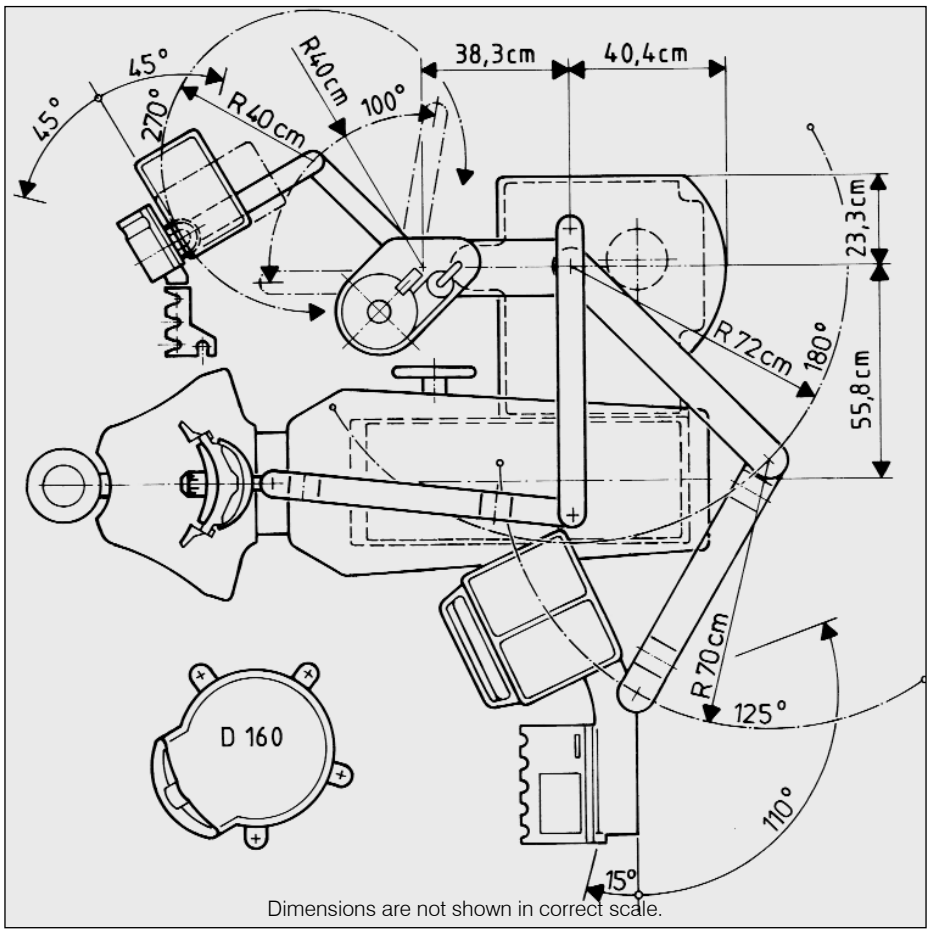
Technical modifications reserved.

The assistant's unit is integrated in the unit column. No cables or supply hoses on the floor.



Dimensions are not shown in correct scale.

The double-arm of the assistant's unit has an extremely wide working radius. Instrument holder and control panel with tray table can be brought very close to the patient or swivelled far off in order to give the assistant space.



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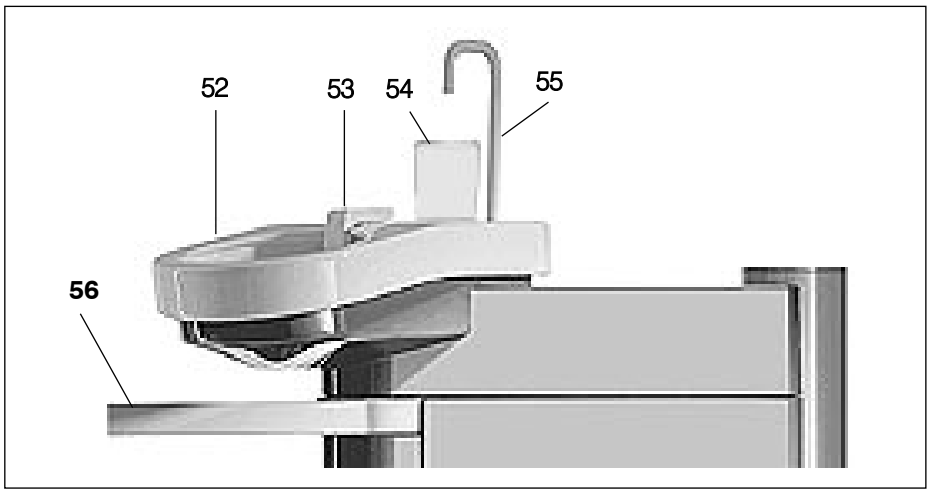
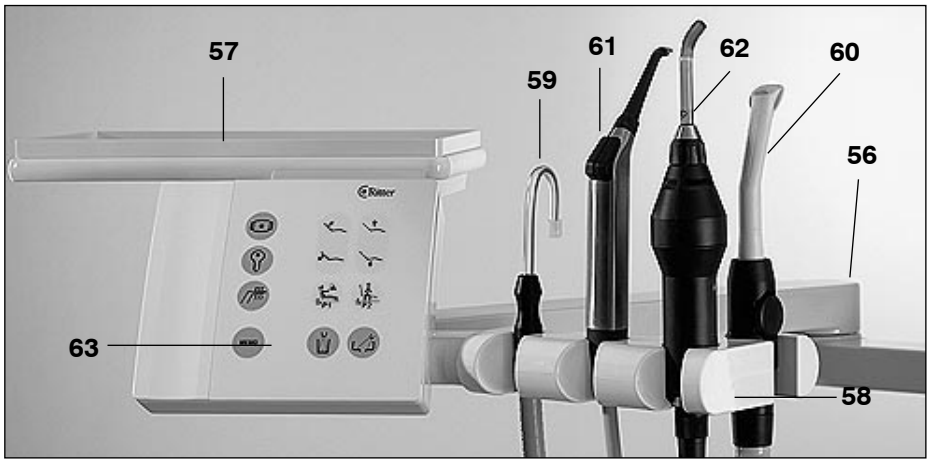
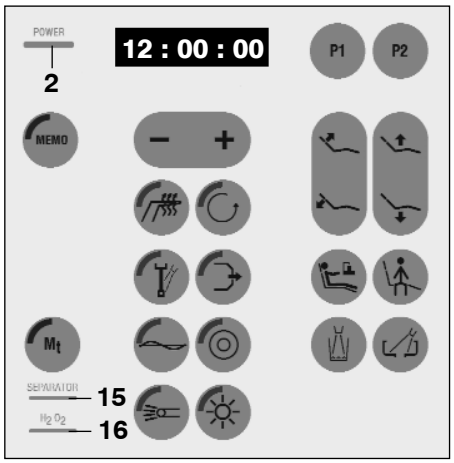
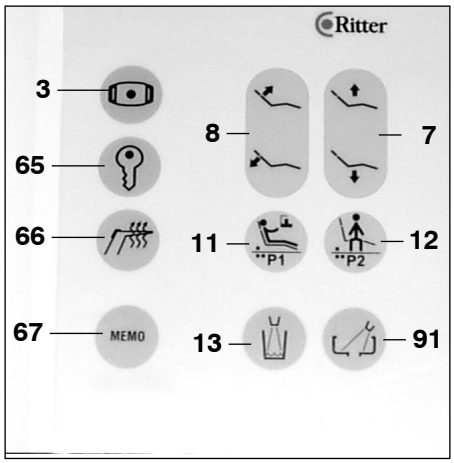
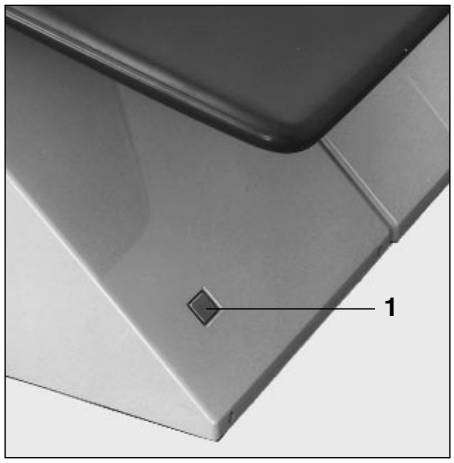










1 main switch ON/OFF
2 LED indicator illuminated: work place ON via main switch
3 key, dental operating light ON/OFF
7 key, patient chair UP/DOWN
8 key, backrest UP/DOWN
11 program key, mouth rinsing position, treatment position 1
12 program key, exit position, treatment position 2
13 key, cup filler
14 key, bowl flush
15 amalgam separator, LED indicator blinks slowly (2-second intervals): amalgam collector is 95 % full LED indicator blinks quickly (1-second intervals): centrifuge disturbance
16 water disinfection system LED indicator blinks: water disinfectant H2O2 must be refilled LED indicator constantly illuminated: disturbance of water disinfection system
52 cuspidor bowl
53 pipe for bowl flush. The pipe can be taken off for cleaning the bowl. Before doing so, it is absolutely necessary to switch off the unit via the main switch (1) in the patient chair pedestal!
54 cup, not transparent
55 cup filler. Can be taken off for cleaning the bowl. Before doing so, it is absolutely necessary to switch off the unit via the main switch (1) in the patient chair pedestal!
56 swivel arm with double articulation
57 tray table
58 instrument holder
59 saliva ejector
60 spray suction
61 syringe
62 curing light
63 control panel, assistant's unit
65 door opener
66 key, syringe heating ON/OFF
67 Memo key
68 hydrocolloid quick-connection optionally, the assistant's unit can be provided with a hydrocolloid quick- connection

Keys (11) and (12) have double functions:Pressing them quickly twice corresponds to

11 treatment position P1
12 treatment position P2

Attention!

Switch off the unit at the main switch in the patient chair pedestal before removing cup filler and pipe for bowl flush.

Cup filling

To fill the cup, there is a choice of two programs - either MANUAL AUTOMATIC or SEMI-AUTOMATIC. Factory setting is manual automatic. A subsequent change can be made by the service technician.

The filling level is dependent on the previous manual cup filling procedure. Place glass or plastic cup on the support plate. Press MEMO key (19) of dentist's control panel (LED indicator illuminated). Now, press key (13) until the glass or plastic cup has reached the desired filling level. Extinguishing of the MEMO key LED indicator and three beeps confirm that programming of the filling level has been stored. Alternatively, cup filling level can also be stored by simultaneously pressing keys (19) and (13) of the assistant's unit until the desired filling level is reached. Recommended filling level: two thirds of the glass or plastic cup.

Accidential excess water will vanish via the cup support plate.

MANUAL AUTOMATIC

By pressing key (13) the glass or plastic cup is being filled. The filling procedure stops automatically. Premature stop of filling procedure: press key (13) once more.

SEMI-AUTOMATIC

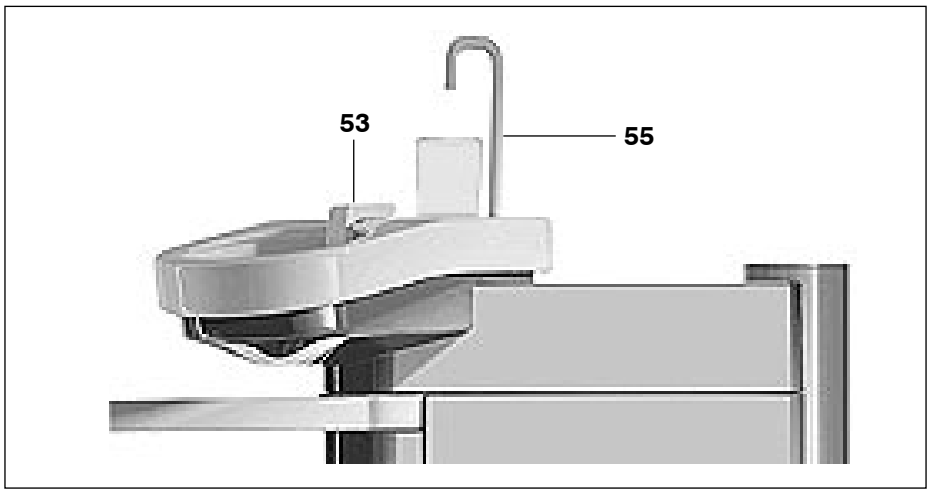
The glass or plastic cup is automatically filled after placing it onto the support plate (with a time lag of 3 seconds).

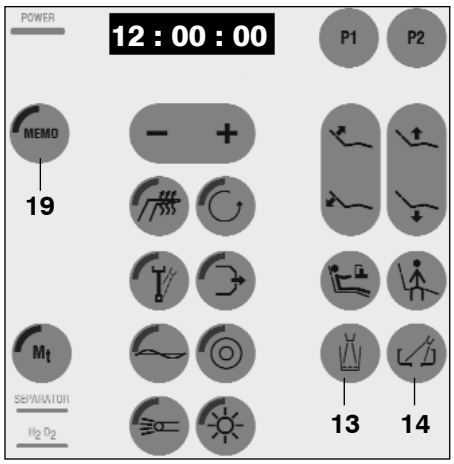
By pressing key (13) the filling level can be increased.

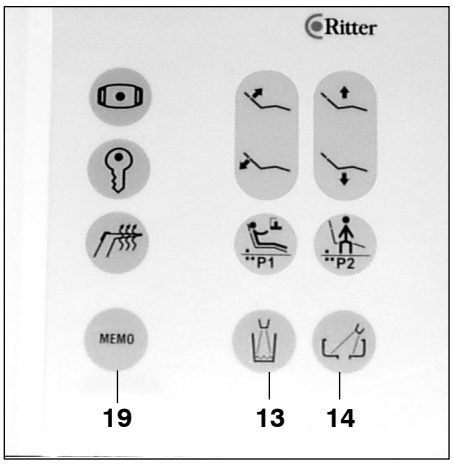
Factory setting is manual automatic.

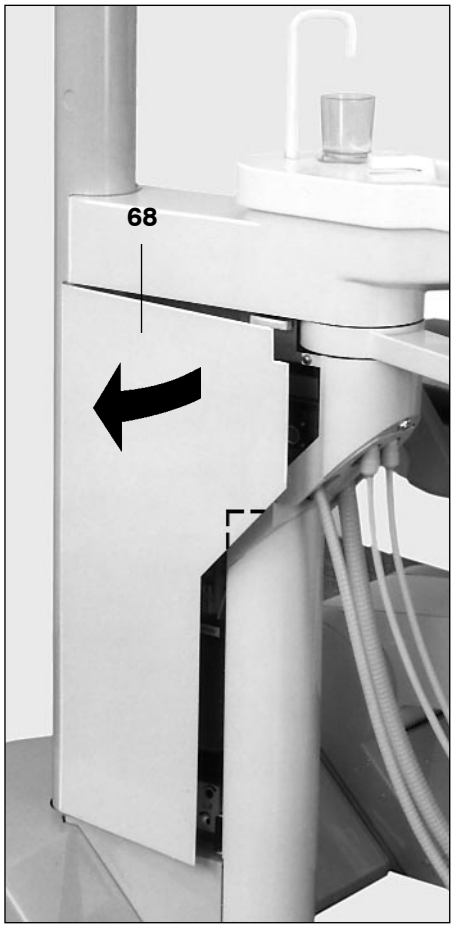
A subsequent change can be made by the service technician.

Important: Do not use any transparent glasses. The water intensity of the cup filler (55) is regulated with adjustment knob (69). Turning the nob to the left increases and turning the knob to the right reduces the water intensity, respectively. This adjustment knob is to be found in the unit column, behind door (68) which has a magnetic lock.









Manual bowl flush

The bowl flush starts when pressing key (1**4**) and stops automatically after approx. 20 seconds.Premature stop of bowl flush: press key (1**4**) once more.

Automatic bowl flush

Automatic bowl flush starts when taking the glass from the support plate.

The flushing time is constant and set for 20 seconds.

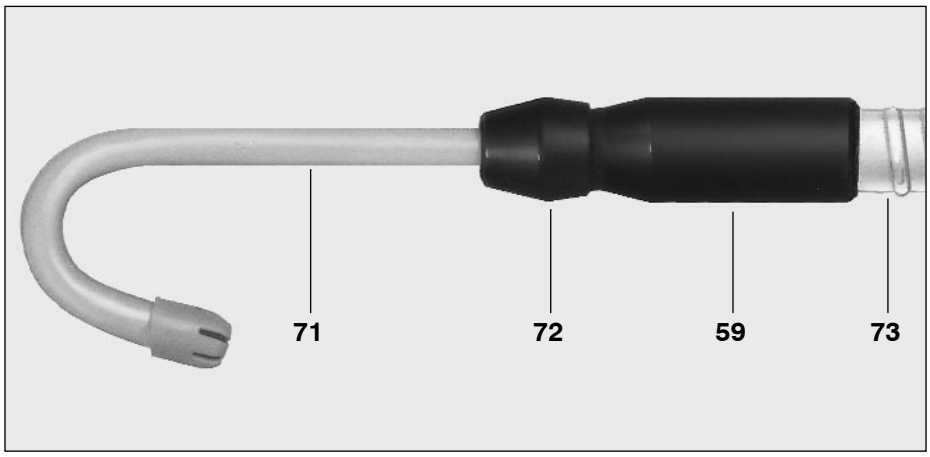
Factory setting is automatic bowl flush, however, this can subsequently be changed by the service technician.

The flushing intensity of the bowl flush pipe (**53**) is regulated by adjustment knob (**70**). Turning the knob to the left increases and turning the knob to the right reduces the flushing intensity, respectively. This adjustment knob is to be found in the unit column behind door (**68**) which has a magnetic lock.

Saliva ejector

The handpiece can be equipped with common suction tips (**71**). When taking the saliva ejector from its holder, the central aspiration system is activated.The handpieces which remain in their instrument holders are shut-off.

Design and size of the handpiece (**59**) allow easy handling with one hand. With thumb and forefinger sleeve (**72**) and tip (**71**) can be turned into the desired position without torsion of the hose (**73**).

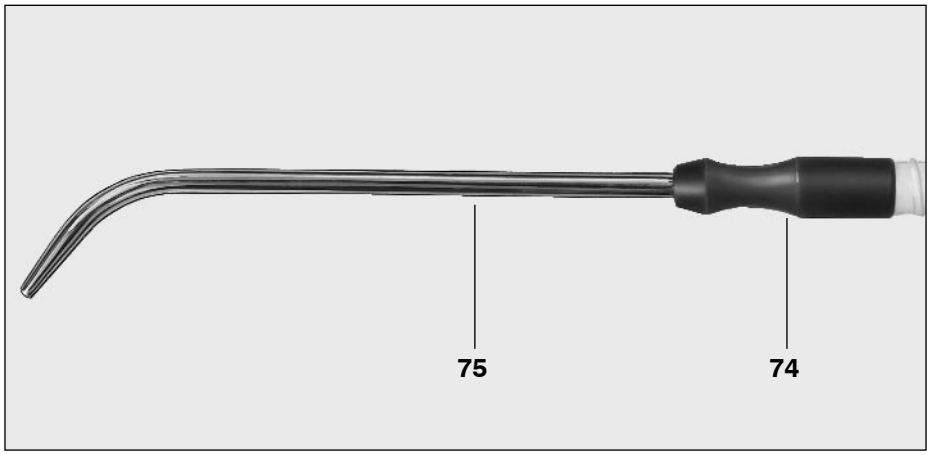


Surgical suction

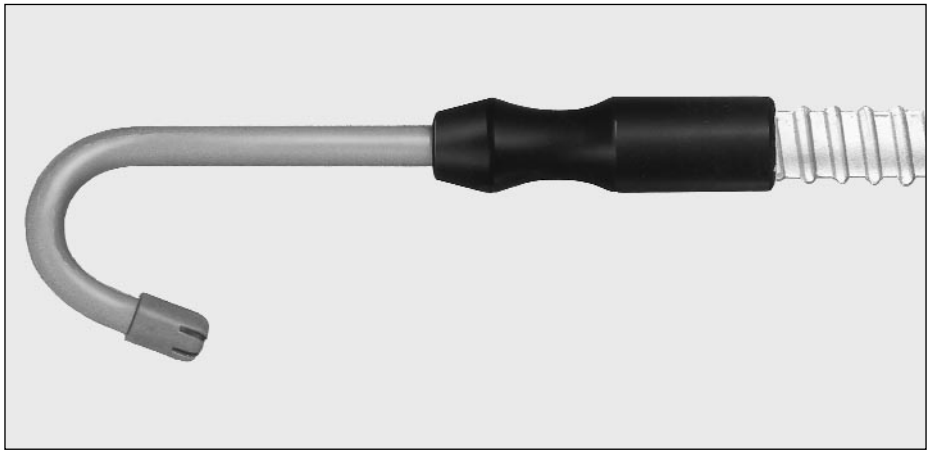
The handpiece can be equipped with common surgical tips (**75**).

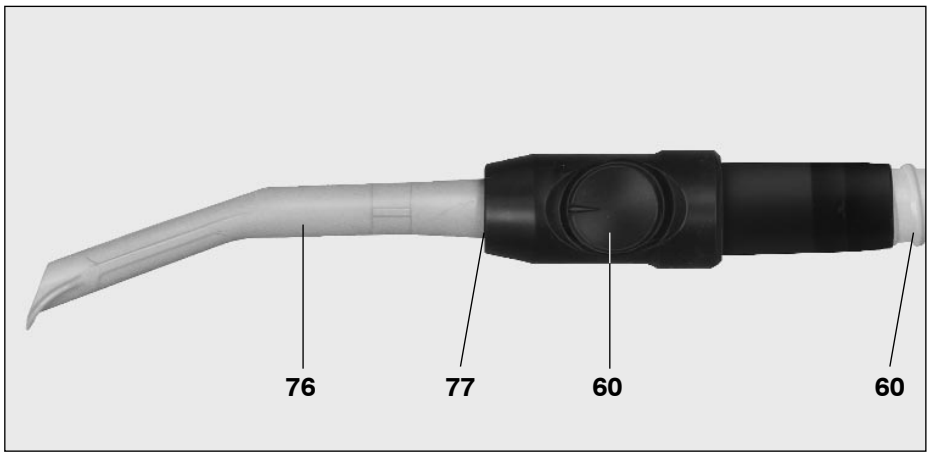
When taking the surgical suction (**74**) from its holder, the central aspiration system is activated.

When returning the handpiece into the holder, the aspiration system is shut-off.



The handpiece can also be equipped with common saliva ejector suction tips.





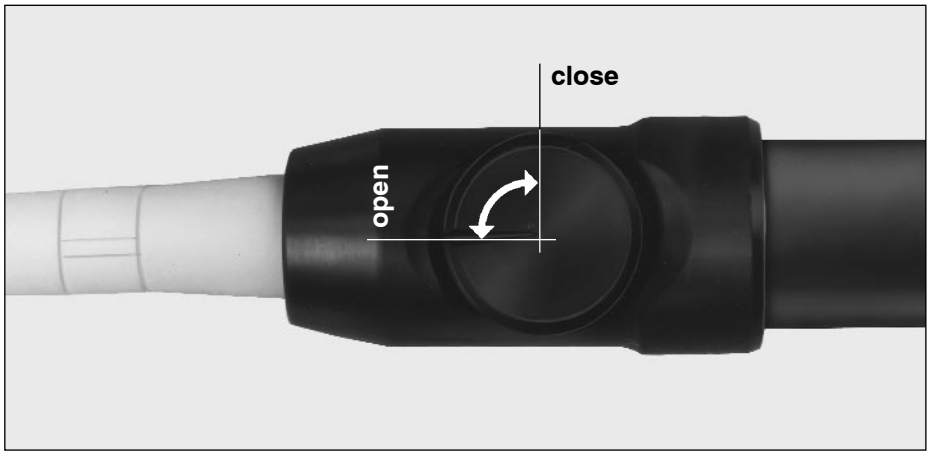
Suction handpiece

The handpiece can be equipped with common suction tips (**76**).

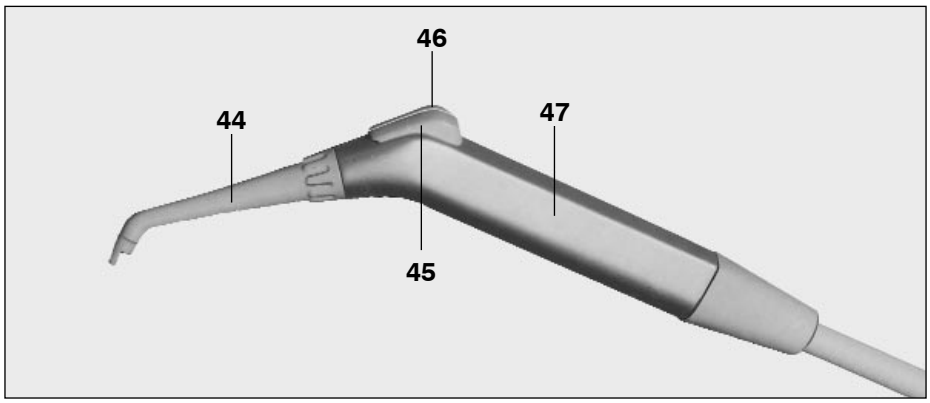
When taking the suction handpiece (**60**) from its holder, the central aspiration system is activated.

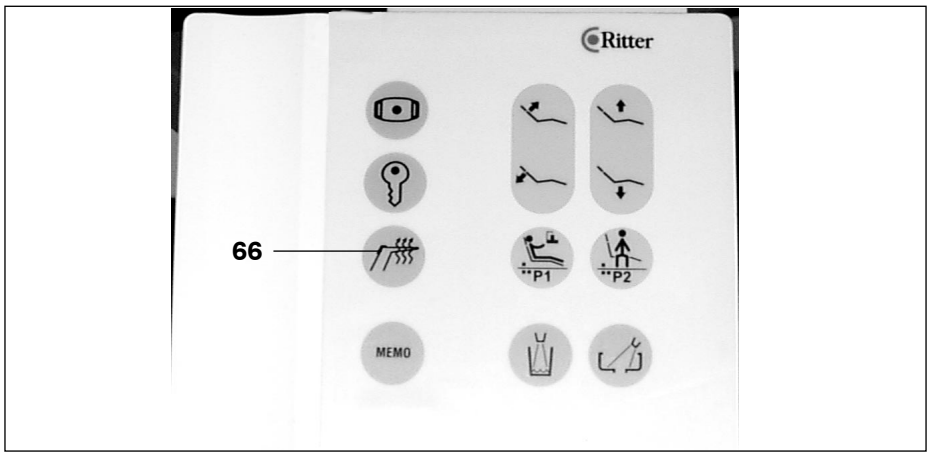
The rotatable sleeve (**77**) allows handling with one hand. With thumb and forefinger sleeve (**77**) and tip (**76**) can be turned into the desired position without torsion of the hose (**78**).

When returning the handpiece into the instrument holder, the aspiration system is shut-off.



The suction handpiece can also be equipped with a surgical tip when using an adaptation sleeve.





Main characteristics

The Topjet syringe is very handy. Due to its design, it allows good access to all jaw quadrants. The syringe tip (**44**) is rotatable.

Syringe handpiece with disposable tip

Disposable tip with adapter optionally.

Order No. F 317-075 - disposable tip (100 pieces)

Order No. F 317-074 - adapter

Operation

Water, air or spray are controlled manually. Supply of the media lasts as long as the corresponding key of handle (**47**) is depressed. Either air (**45**) or water (**46**) can be obtained by actuating the corresponding key. Pressing both keys (**45** + **46**) at the same time will provide spray. After switching on the heating (**66**) warm air, warm water or warm spray are available.

Syringe heating

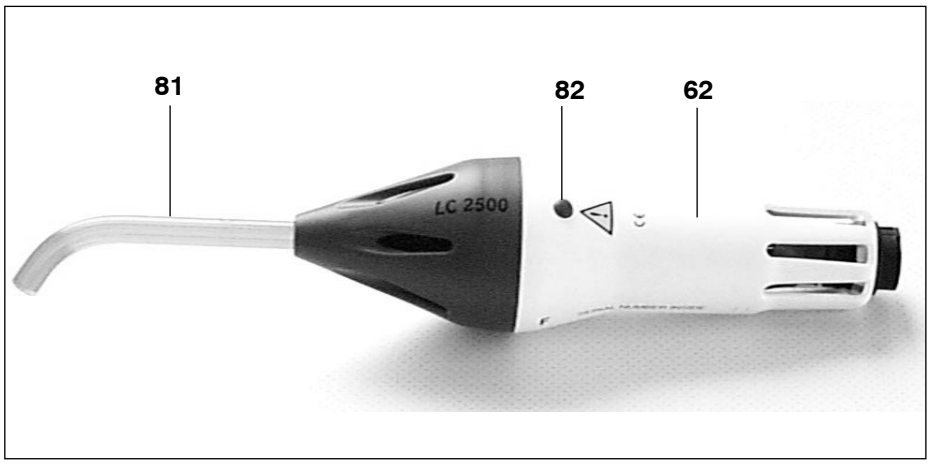
When switching ON the heating for the assistant's syringe there is one beep to be heard, when switching OFF - two beeps. The temperature of the syringe media (air, water, spray) preselected at the dentist's unit applies also for the assistant's syringe.

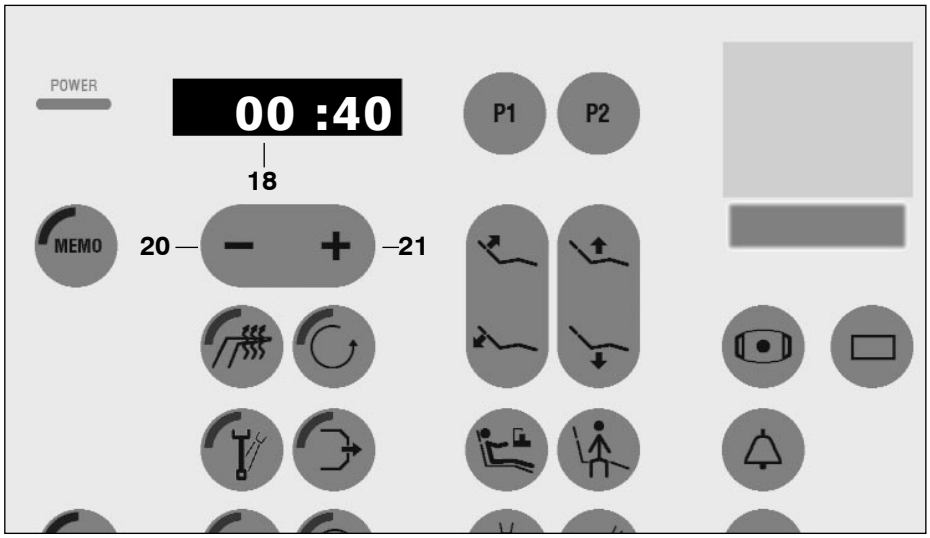
Volume

The volume of air, water or spray depends on the force applied to the keys during operation.

Note:

After activating the unit (for example in the morning), the syringe heating is always OFF.





Technical data

supply voltage: 24 V AC
rated input: 70 W
voltage supply to bulb: 8.9 V DC
mode of operation: DAB (ED = 50 %)*

*DAB = Continuous operation with intermittent load. In case of an operation of 50 % this corresponds for instance 10 min (24 cycles) OPERATING TIME - 10 min PAUSE

Operation

Take the handpiece (62) from its holder. The display (18) indicates the number 40. This means that the curing light is switched on for 40 seconds after pressing switch (82). After 40 seconds, the light beam will extinguish automatically. Four beeps indicate the end of the curing cycle.

The standard cycle of 40 seconds can be reduced or increased via keys (20, 21) before pressing switch (82). In case of overheating, the lamp is temporarily switched off automatically via a thermoprotection switch. It is possible to erform several curing cycles consecutively.

Operating hints

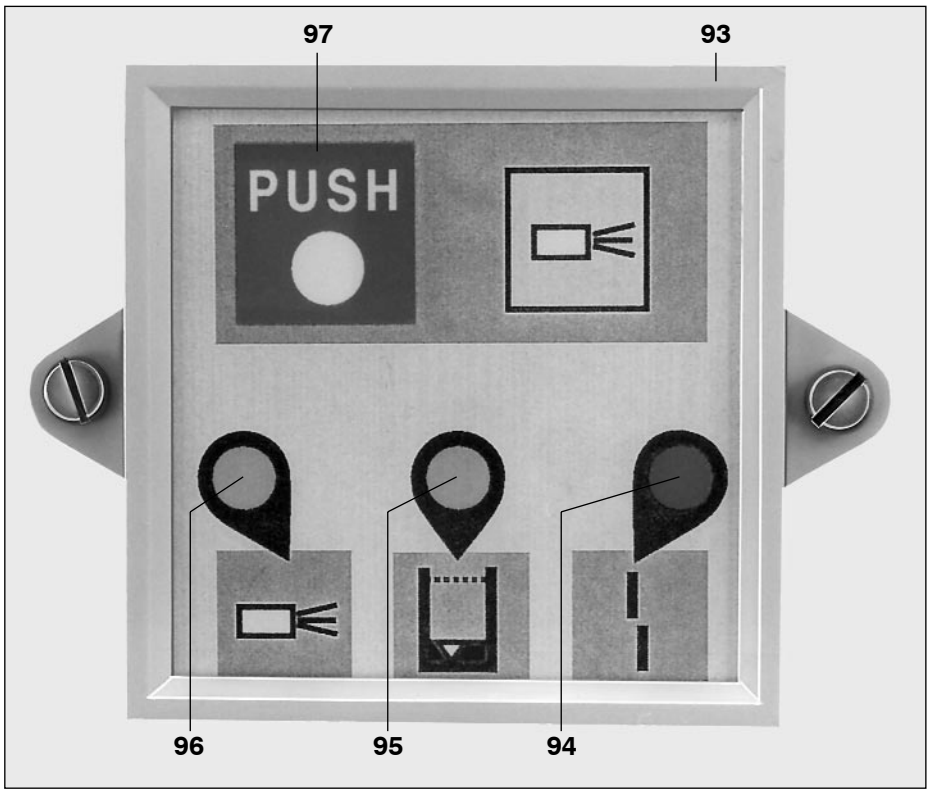
Please adhere to the composite material manufacturer's instructions as different materials and shades have specific curing characteristics. A precondition for proper curing of the composite material is that light guide and blue filter are clean (please refer to "Maintenance"). Clean very frequently with isopropyl alcohol. Avoid any contact between the polished end of the light guide (81) and non-cured composite material. If necessary, clean with alcohol. Hold the handpiece in such a way that the vent slots are not covered by your hand.

Do not look directly into the curing beam.

The plug nipple (**83**) of the hydrocolloid quick connection (**67**) is suited for a ¼" hose which serves as coolant water supply line to the hydrocolloid moulding spoon.

The nipple (in the accessories) is plugged into the quick connect and secured with the locking lever in the annular groove of the quick connect bushing. Prior to connection, assure proper water discharge of the coolant water discharge pipe into the cuspidor bowl as the coolant water supply is released automatically as soon as the connection is made.

Important! As soon as the connection is made,take assistant's Topjet out of its port and lay it down. This will prevent that the coolant water supply is stopped prematurely. This could happen, because after two minutes the main valves will shut automatically if they were not activated during this period of time.



The hygiene system H1 can be **optionally** integrated into the assistant's unit. Factory standard is the suction system S1 for which the following does not apply.

Function of Hygiene System H1

The hygiene system H1 takes care of cleaning the suction hoses. It works automatically and reduces the hazard of infection brought about by the secretion-carrying tubes. As long as aspiration takes place, the hygiene system takes care of permanent cleaning and disinfecton of those parts of the aspiration system which constantly become contaminated.

Important: Please do not use any additional cleaning or disinfection means as this could cause negative interactions of the different chemicals.

Initial cleaning program

Whenever the unit main switch is switched ON, the aspiration system becomes activated and the initial cleaning program starts automatically for approx. 20 seconds (approx. 10 seconds per suction hose). This means that an increased dosage of chemicals takes place in order to remove foam and any residues which may have detached over night. The suction handpieces remain in their place, the shut-off valves of the **handpieces**, **however**, **must be opened**. Taking the suction handpiece from its holder and working with it will not interfere with the program.

Permanent cleaning ot the suction hoses

Starting at that moment when taking one (or both) suction instrument from its holder until placing it back again, contamination is impossible due to permanent water rinsing. The periodical dosage of chemicals disinfects and removes the foam within the aspiration system.

The ratio chemicals/water can be changed by the service technician.

Special cleaning program

We recommend to apply the special cleaning program at least once a day (in the evening) or after heavy contamination of the aspiration system (with blood, purulent etc.). The special cleaning program is activated by pressing key PUSH (**97**) and lasts approx. 3minutes. LED indicator (**96**) blinks. The suction handpieces remain in their place, **the shut-off valve of the handpiece**, **however**, **must be opened**.

Control Unit (**93**)

94 LED indicator blinks red (and single beep whenever a suction handpiece is removed from its holder): disturbance of the hygiene system. However, operation still possible. Call service technician.
95 LED indicator blinks yellow (and single beep whenever a suction handpiece is removed from its holder): replacement of the chemical tank necessary.
96 LED indicator blinks yellow - this indicates that the special cleaning program is ON
97 PUSH key for activating the special cleaning-gram.

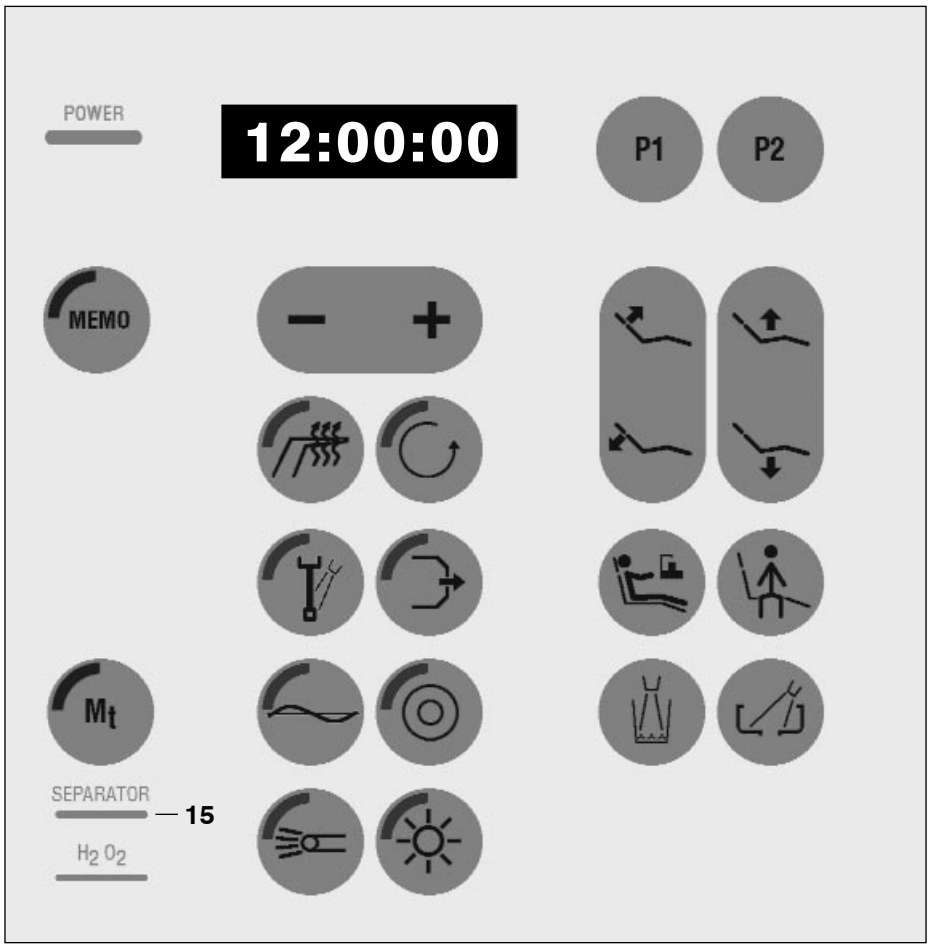
The optionally integrated amalgam separator MST 1 helps you to meet all environmental protection requirements. Contamination of waste water by amalgam is drastically reduced.

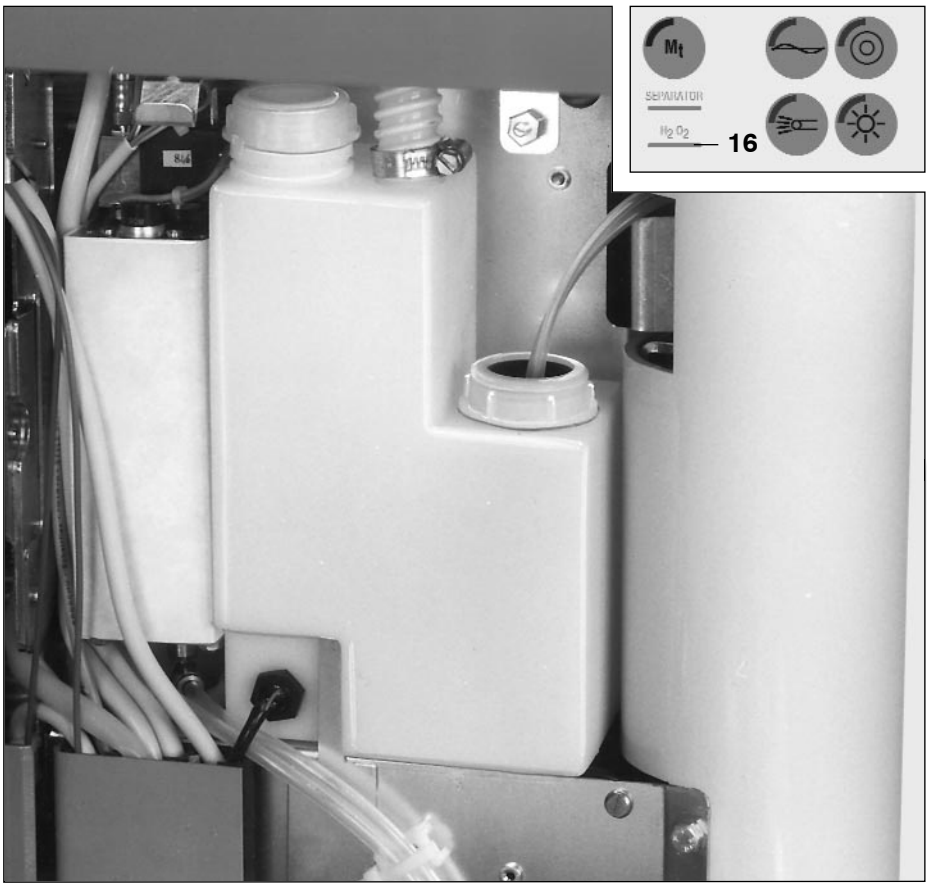
The main characteristics of the amalgam separator are:

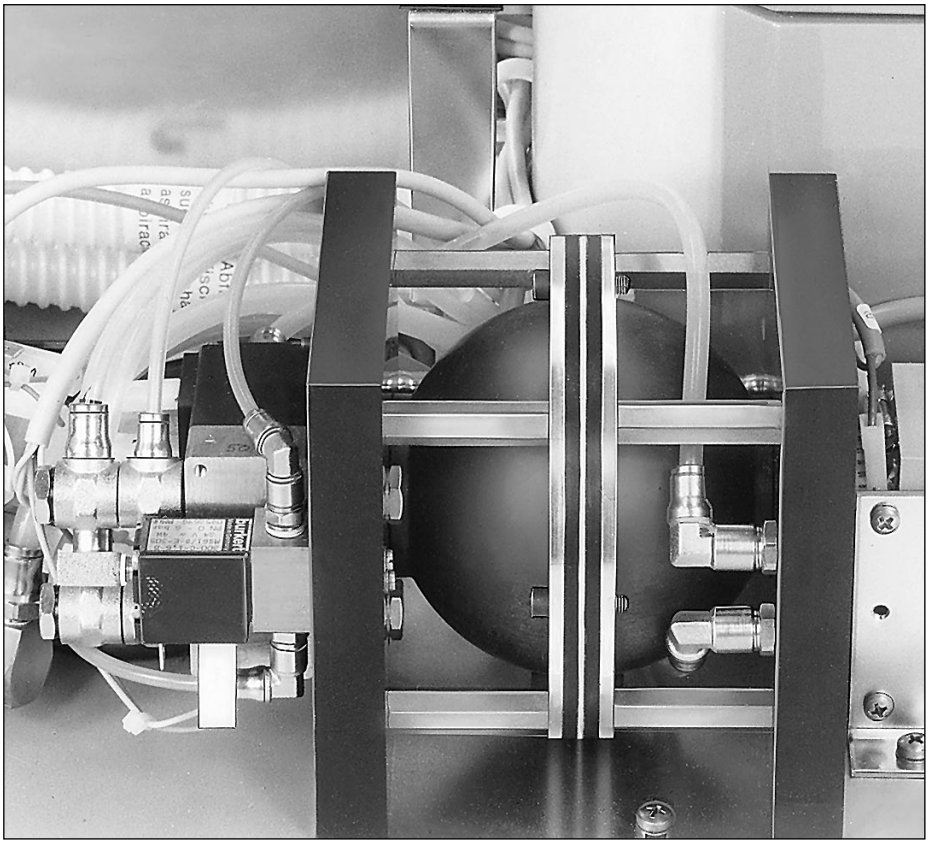
- Two-step separation in short and system-adapted intervals (sedimentation and centrifugation)
- Integrated dirt-resistant air/water separation
- Self-cleaning centrifuge double chambers
- Degree of amalgam separation: 98.6 %
- Separate processing of the two different waste streams (aspiration, waste water)

When the amalgam collector is filled by 95 %, the LED indicator (1**5**) blinks slowly (in two-second intervals). Additonally, the dentist's unit gives 4 signals, each with 4 short beeps whenever the unit is switched ON and whenever the chair moves to the automatic exit position. The collector must be exchanged soon. However, operation is still possible. When the amalgam collector is 100 % full, the suction flow valve does not open any more and thus operation is made impossible.

When the LED indicator (1**5**) blinks quickly (one-second intervals), there is a centrifuge disturbance and the service technician must be called.







By means of the optional water disinfection system WES D 628 the patient water, i.e. instrument spray water and mouth rinsing water, is being pretreated. The effective substance is H2O2 with an initial concentration of 3 % which in the system becomes diluted to a 35 ... 50 mg/l employable solution.

If the tank for the disinfectant H2O2 is almost empty, the LED indicator (16) blinks. The tank must be refilled with 1 liter of Formatex (Order No. U 4700).

If the LED indicator (16) is constantly illuminated, the water disinfection system has a failure and the service technician must be called.

In case of failure of the water disinfection system, the unit is automatically switched over to normal, non-treated water and operation with the unit can be continued.

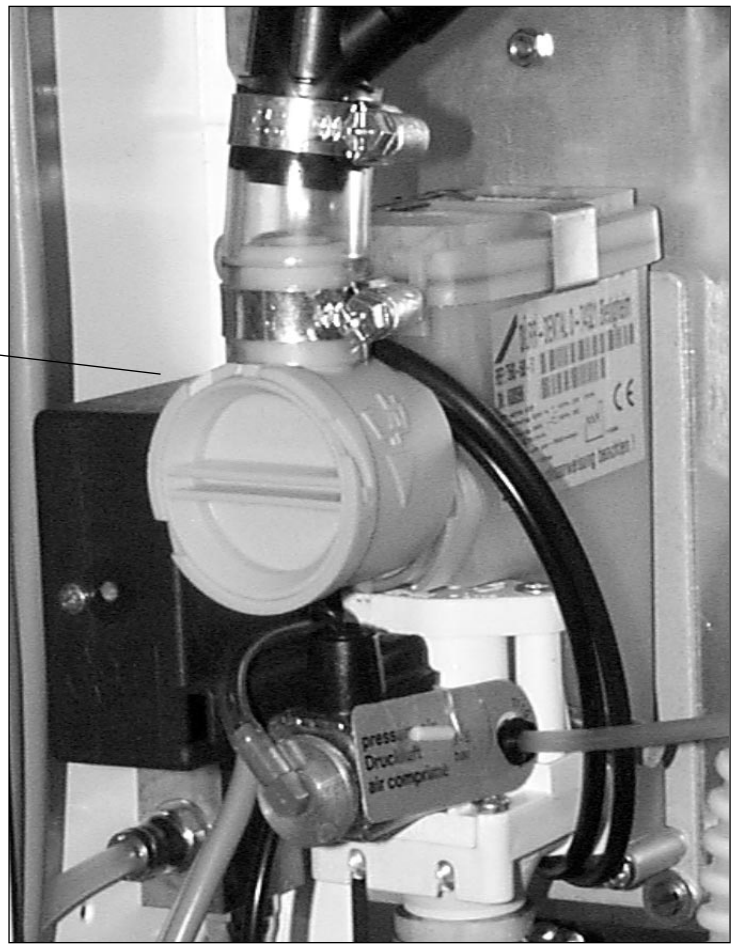
Optionally, the assistant's unit can be provided with a valve for bowl rinsing. This valve eliminates suction noises at the cuspidor bowl.

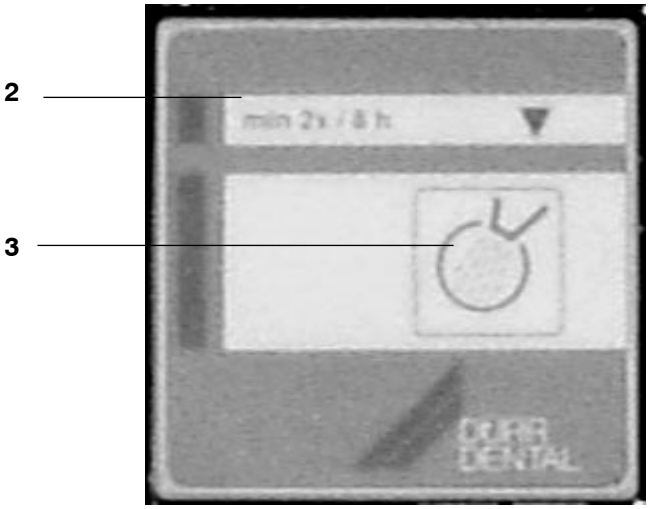
In order to warrant proper function of this valve, the automatic cleaning process has to be activated at least twice a day.

The valve for bowl rinsing (1) and the control element (**2**) are integrated in the column of the assistant's unit.

For activating the automatic cleaning process press key (**3**).

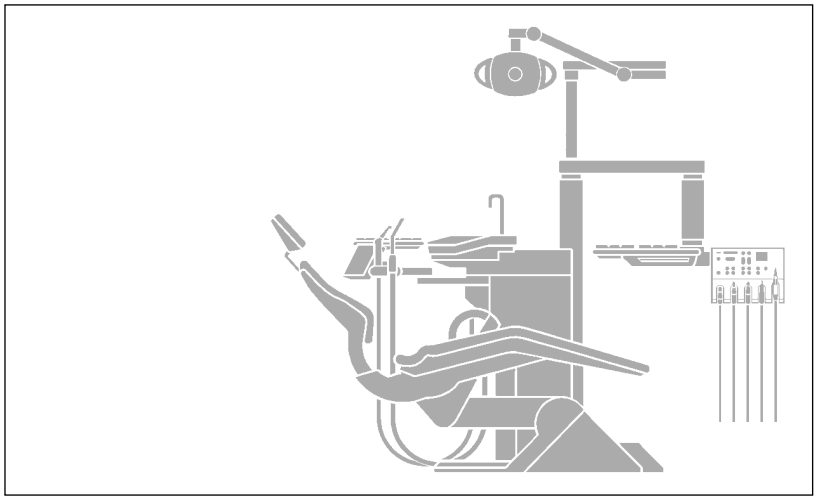
The manufacturer's instructions have to be adherred to.





Ritter Contact D720

Dental work place
Maintenance instructions



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Ritter
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Technical modifications reserved.

Conformity with the hygienic standards as well as good performance of the equipment are warranted by adherring to the recommendati-onsfor disinfection, cleaning and maintenance.

Burr instruments

- Before the first treatment, let instruments run for approx. 30 seconds to purge all spray tubes.

-Clean and maintain turbine, handpieces and contra-angle attachments.

Important: Please read the manufacturer's instructions for the burr instruments very carefully.

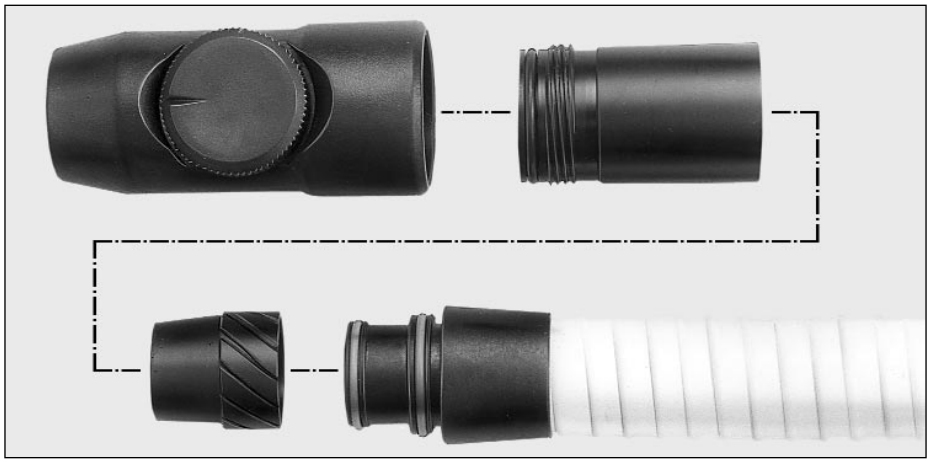
Important: The instrument hoses are not to be cleaned in a thermodisinfector. The hoses can be subjected to a maximum temperature of 40°C.

Saliva ejector, Surgical suction, Suction handpiece

Unscrew handpiece from hose. Clean accessible hose ends and handpieces. Lubricate O-rings with vaseline and reassemble handpiece to the hose.

Unsuited and not permitted are cleaning agents based on quaternary ammonium compositions, cleaning agents containing phenol and aldehyde as well as foam generating agents.

For dosage directions, please refer to the recommendations given for the individual cleaning and disinfection agents.



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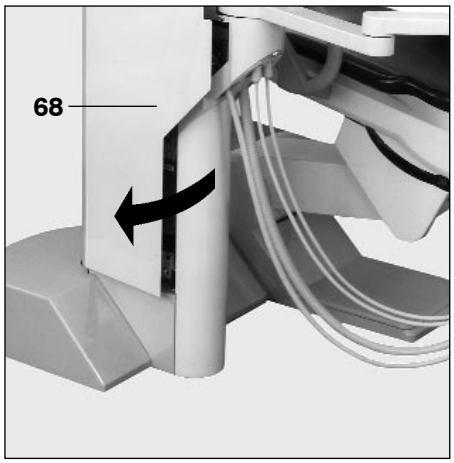
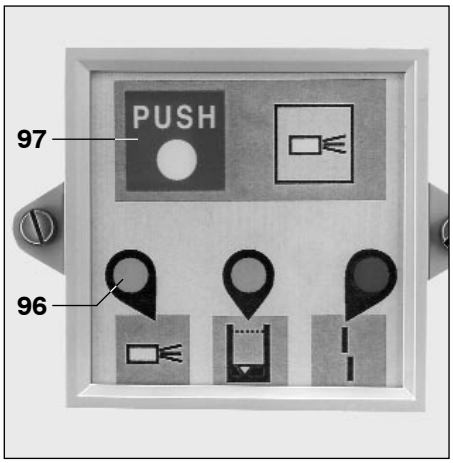
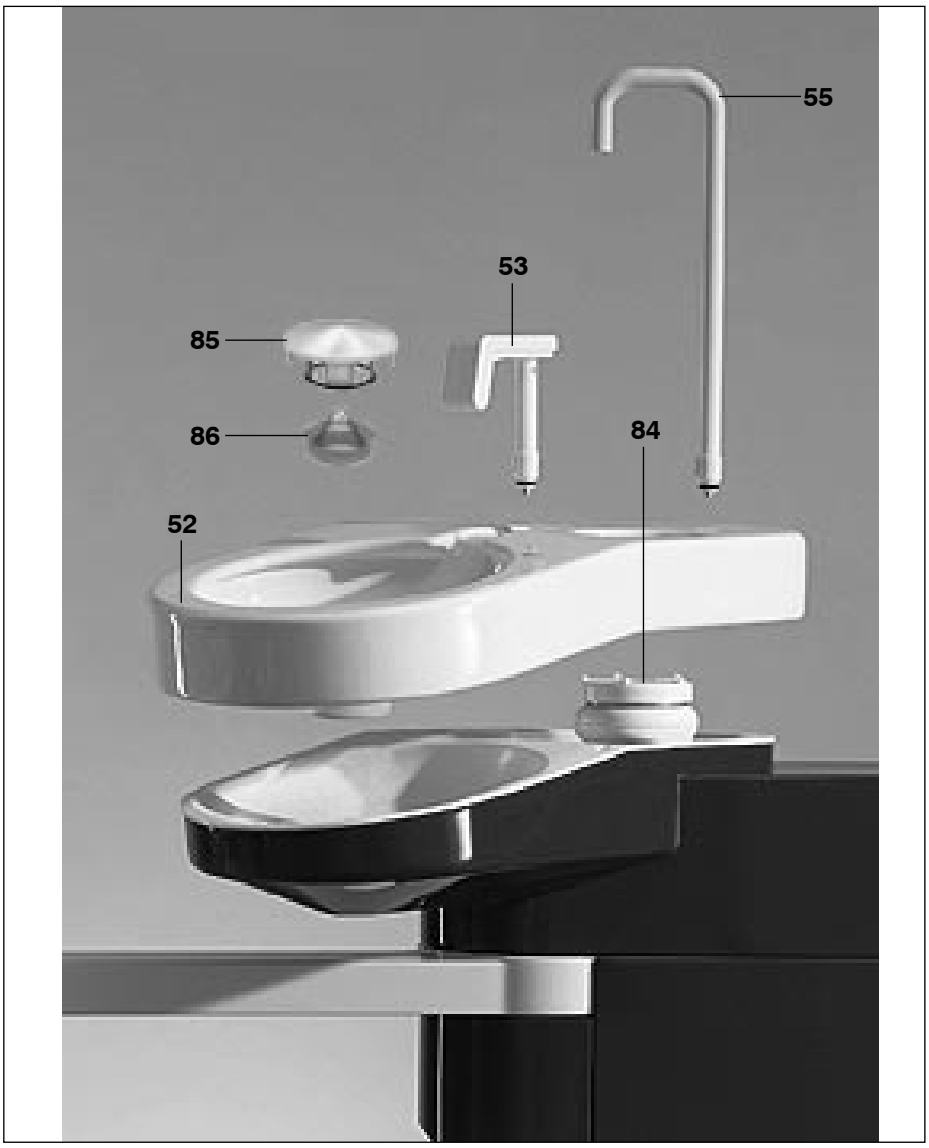
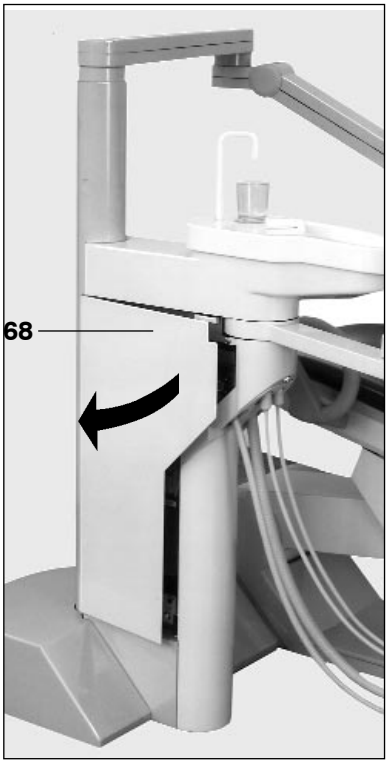
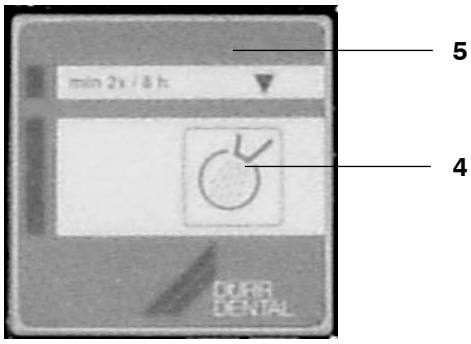










Cleaning of the cuspidor bowl

Before doing the following steps it is absolutely necessary to switch OFF the unit via the main switch in the patient chair pedestal! Remove and clean insert (**85**) and gold trap (**86**). For cleaning, the cuspidor bowl flush pipe (**53**) and cup filler (**55**) can be removed. First remove cup filler (**55**), then the bowl flush pipe (**53**) can be removed together with the cuspidor bowl (**52**). Finally, remove and clean the glass support (**84**).

Please do not use scouring powder, aggressive or foam generating cleaning agents.

Cleaning personnel have to be instructed not to use any common household cleaning agents for cleaning the cuspidor bowl.

It is prohibited to drain chemicals (i.e., disinfectant agents, household cleaners) via the cuspidor bowl.

The cuspidor (**52**) bowl can be cleaned in a thermodisinfector with a temperature up to 95° C.

Please lubricate O-rings with vaseline before inserting cup filler and bowl flush pipe.

Important: Amalgam residues from the gold trap are not to be poured into the waste water.

Cup filler

Daily, before the first patient treatment, actuate the cup filler three times to have fresh water.

The glass cups an be sterilized in an autoclave at 105° C and 0.25 bar, however, a shock temperature of 60° C should not be exceeded.

Attention!

Before taking off the cup filler and the pipe for bowl flush switch off the unit at the main switch in the patient chair pedestal.

Units equipped with bowl rinsing valve:

Before lunch break and before leaving the surgery in the evening the bowl rinsing valve must be cleaned. Pour 1 liter of suitable, non-foam generating disinfectant solution into the cuspidor bowl (for example OROTOL) at the same time pressing key (**4**) **for approx. 3 seconds**.This control element (**5**) is to be found behind door (**68**).

Separation filter (filter sieve)

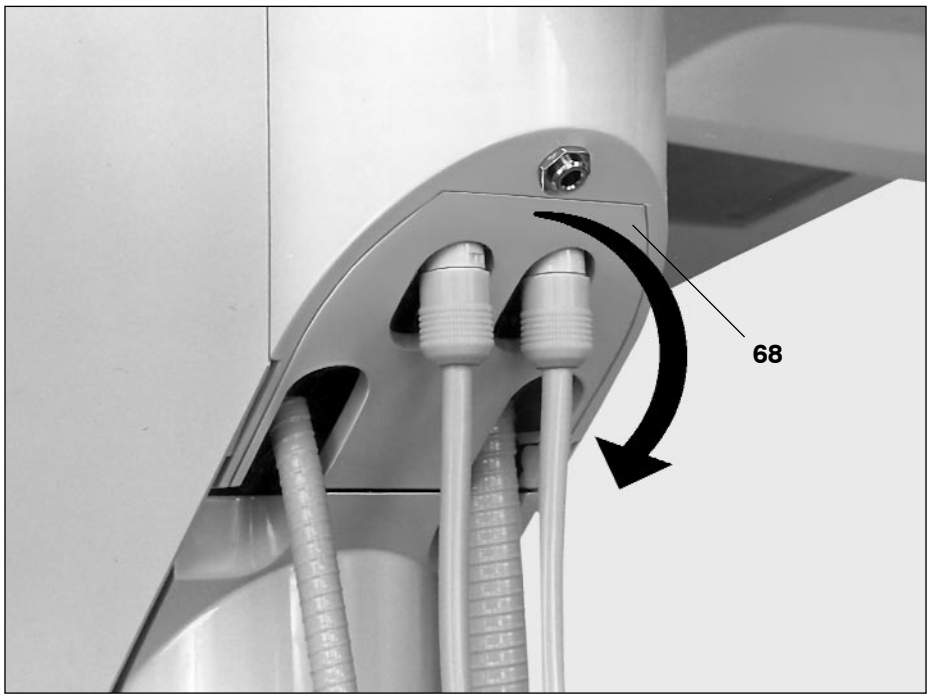
It is recommended to wear protective gloves.

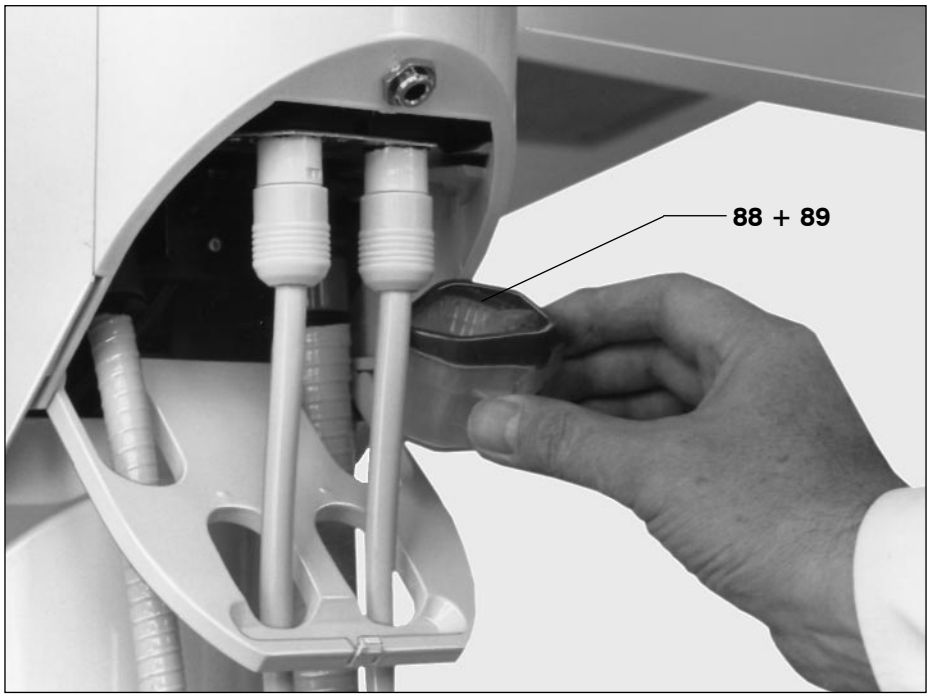
Open cover (**87**) via the opening for the suction hose (snap lock). Horizontally! take out the separation filter container (**89**) together with the filter (filter sieve) (**88**).

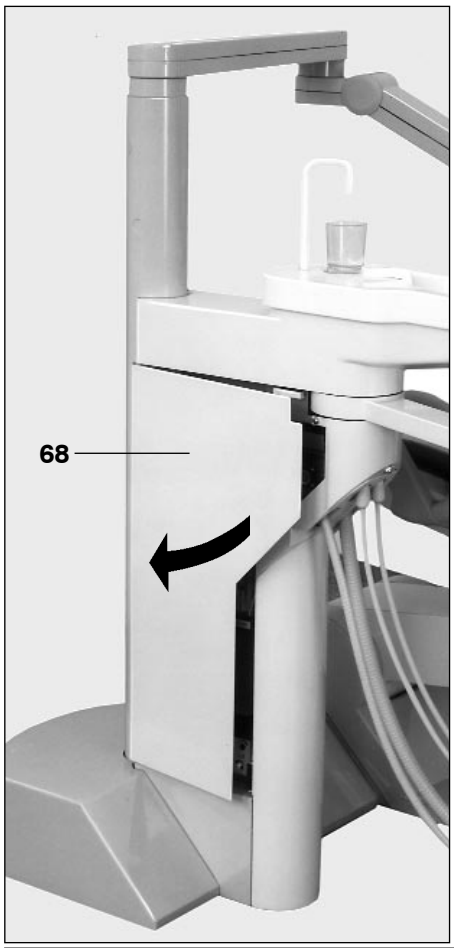
Lift out the separation filter (**88**) from the filter container (**89**) and rinse the filter or, if necessary, replace the filter by a new one (Order No. F 31323 for filter,Order No. F 31324 for filter container).

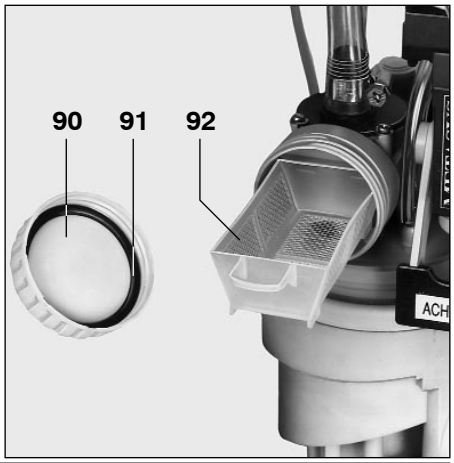
It is not permitted to operate the aspiration system without separation filter.

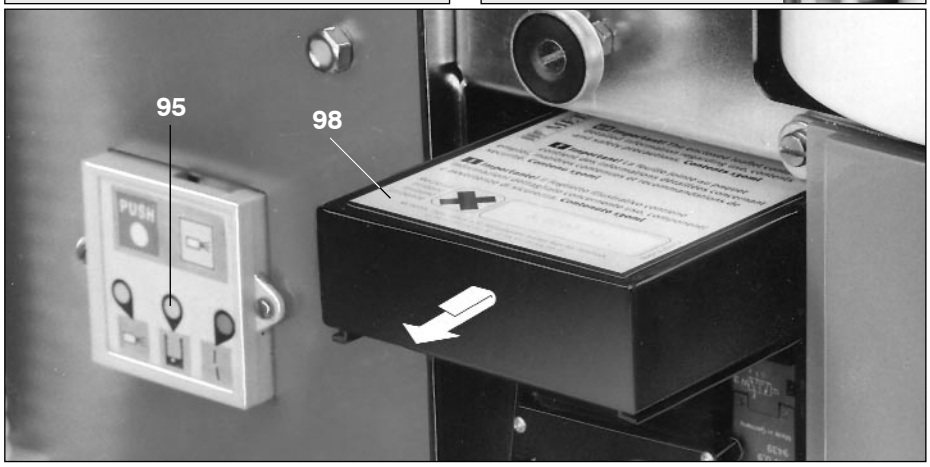
Important: The contents of the filter (amalgam particles) are not to be poured into the waste water.











Filter drawer

The filter drawer (**92**) must be inspected once a week and exchanged if necessary (at least after two or three months, Order No. F 30440, 10 pieces per pack). The filter drawer is to be found in the unit column behind door (**68**) which has a magnetic lock. Unscrew cap (**90**) and inspect washer (**91**). If washer is damaged, it must be replaced (Order No. F30442). Tighten cap (**90**) again and secure tight fit.

It is not permitted to operate the aspiration system without filter drawer.

Important: The contents of the filter drawerare not to be poured into the waste water. Amalgam particles are to be disposed into a spare malgam waste container.

Unit equipped with hygiene system H1:

Exchange of the chemical cartridge

If the LED indicator (**95**) blinks and a beep is heard whenever a suction hose is taken from its holder, the chemical cartridge (**98**) must be exchanged.

First, switch OFF main switch. Open door (**68**) in the unit column (magnetic lock). Press the front locking mechanism (**98**) and horizontally take the cartridge from its guide rails. The new, filled cartridge is placed on the guide rails, inserted and locked by pressure to the front edge of the cartridge. Turn ON main switch again. The initial cleaning program will start automatically (and lasts for approx. 20 seconds).

Units equipped with amalgam separator MST 1:

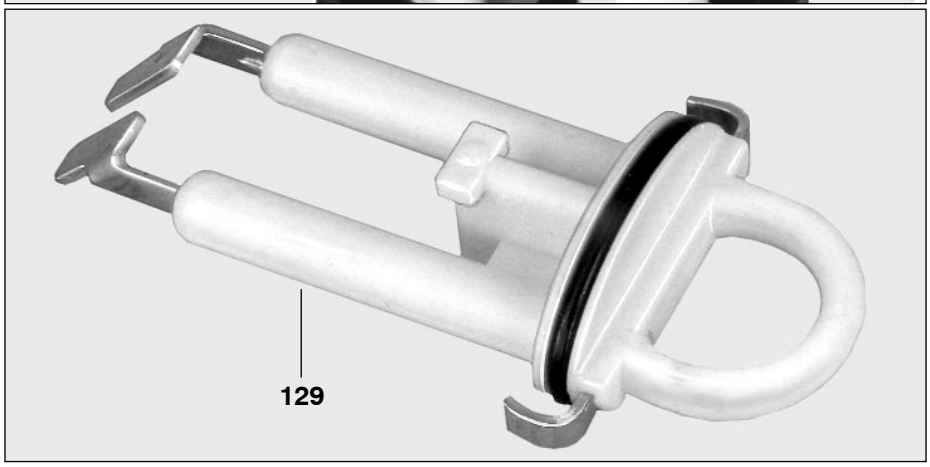
Cleaning the centrifuge probe

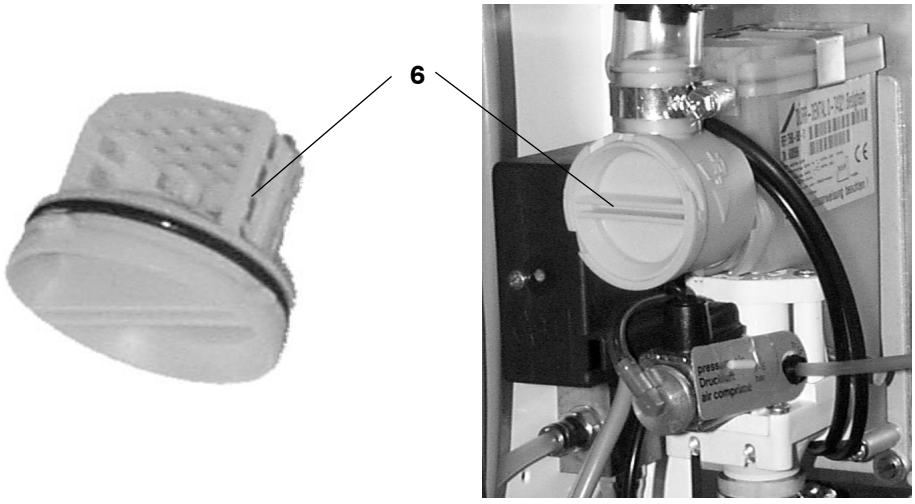
Pull out the centrifuge probe (129) and clean with a disposable paper towel. If necessary, the probe can be cleaned with a brush. When inserting again, correct positioning of the probe is confirmed by a click.

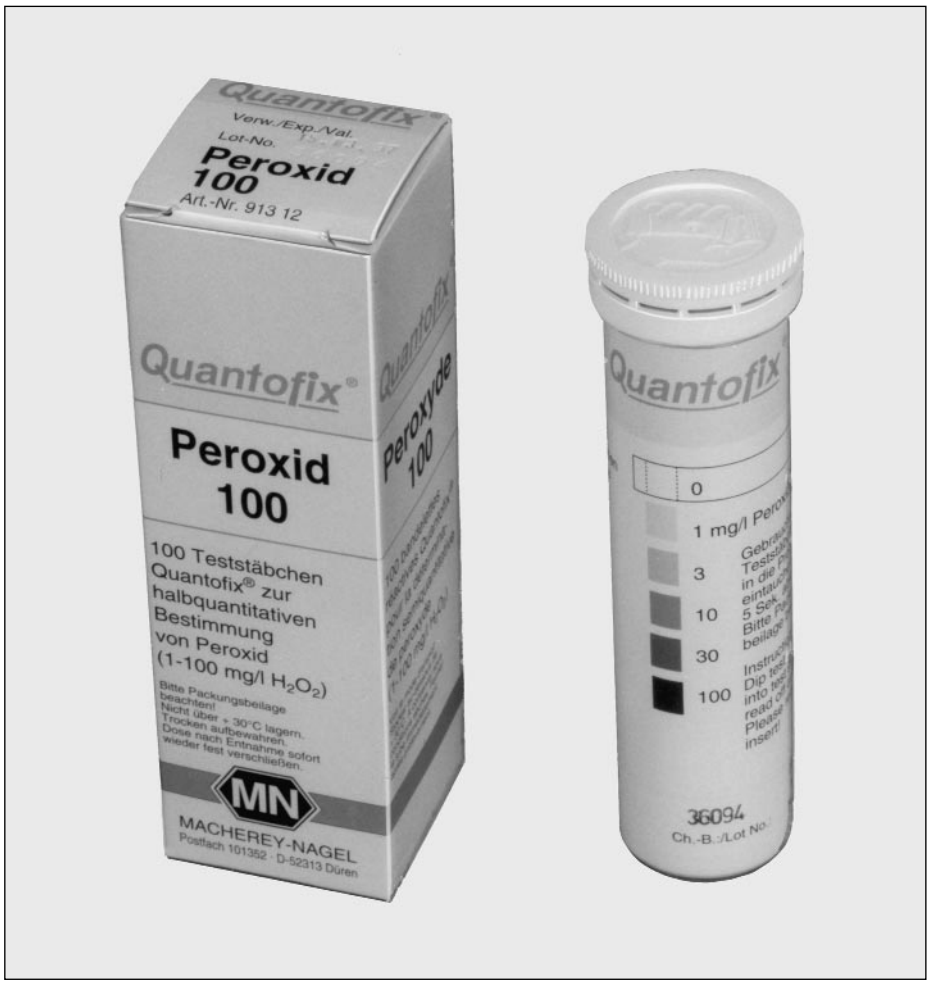
Units equipped with bowl rinsing valve:

Cleaning of the strainer

Take out strainer (6) by slightly turning it to the left Clean and disinfect strainer and insert again.







Check the H2O2 concentration

If the water disinfection system WES D 628 is integrated in the dental work place, the H2O2 concentration must be checked.

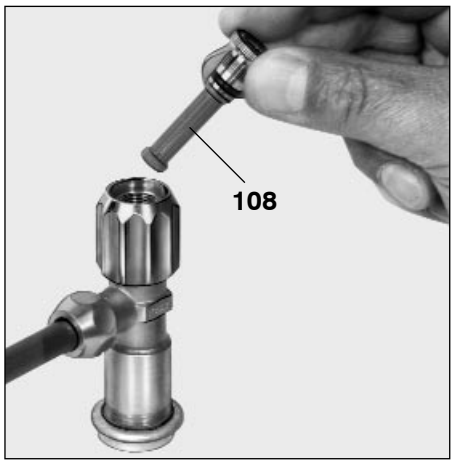
Operate cup filler three times. Determine the H2O2 concentration of the rinsing cup water according to the instructions given for the test sticks. The test area must be dark blue (35 ... 50 mg/l). Please observe the expiry date indicated on the package.

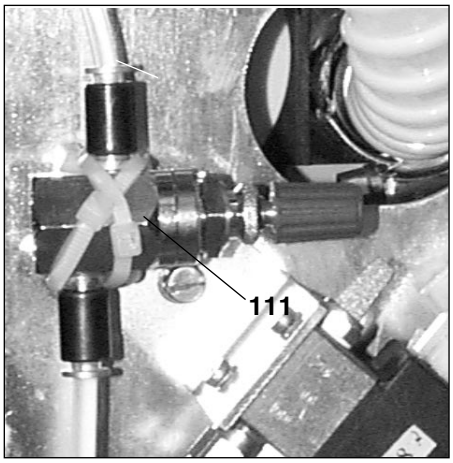
Test sticks (100 pieces per package) -

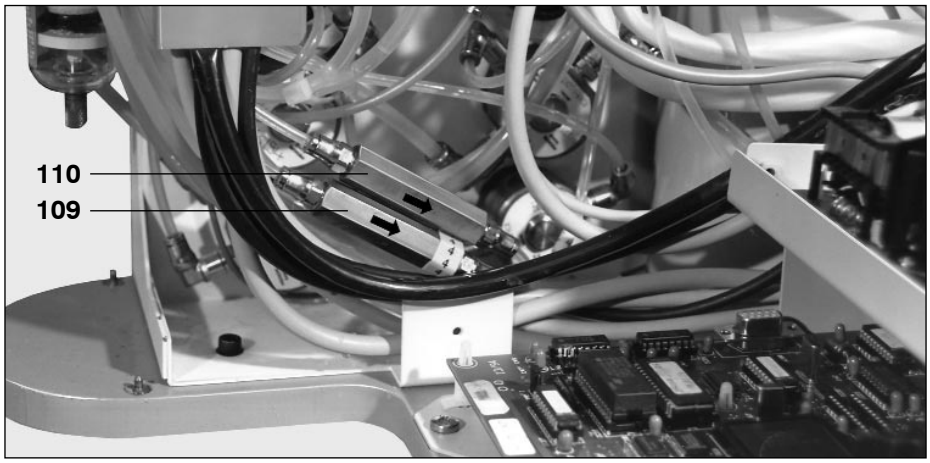
Order No. U 4701.

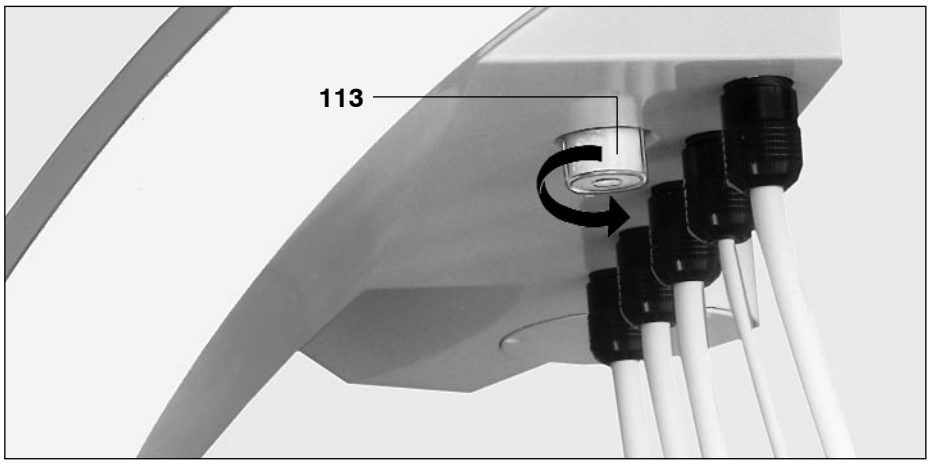
To be performed by service technician only!

- Clean or replace coarse strainer (108) (Order No. F 1182-067).
- Replace fine water filter (109, spray water for burr instruments) (Order No. F 1182-026). Pay attention to the correct flow direction.
- Replace fine water filter (110, syringe water and coolant water for scaler) (Order No. F 1182-026). Pay attention to the correct flow direction.
- Clean or replace filter insert (111, water for hygiene system) (Order No. F 1182-070).
- Clean or replace strainer (112, suction connection) (order No. 300-003).

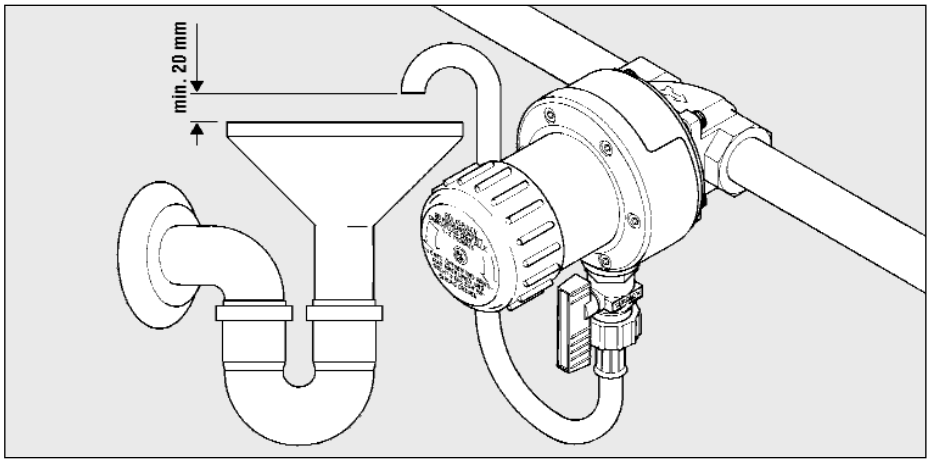








Empty turbine exhaust air oil container (11**3**) and replace cotton wool.

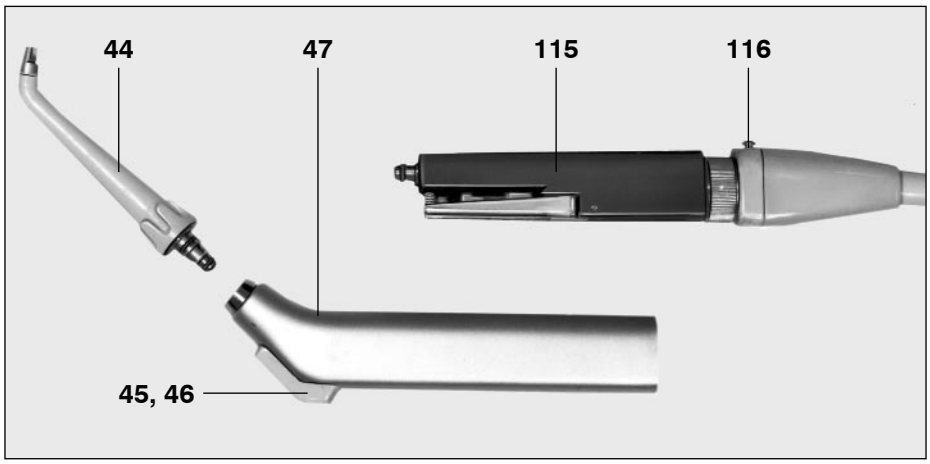


The specified obligatory protective filter (11**4**) at site must be subjected to regular maintenance. Please adhere to the manufacturer's instructions.

Syringe handpiece

Sterilize syringe tip (**44**) and handle (**47**) with superheated steam not exceeding 135° C.

The handle can be removed for cleaning or sterilization. Press button (11**6**) and pull valve body (11**5**) with hose out of the handle (**47**). Do not pull hose. Turn tip (**44**) slightly to separate it from the handle. When reassembling handle and valve body, take care that keys (**45**, **46**) on handle point downwards and are not pressed. Push valve body into handle with activating parts pointing downwards. The button must jump into the groove of the handle.



Syringe tip

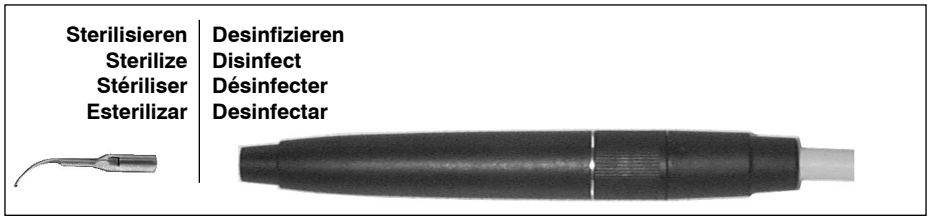
Due to the lime content of the water, the nozzle of the syringe tip (**44**) will clog after some time. Therefore, clean nozzle from time to time with the cleaning pin (in the accessories).

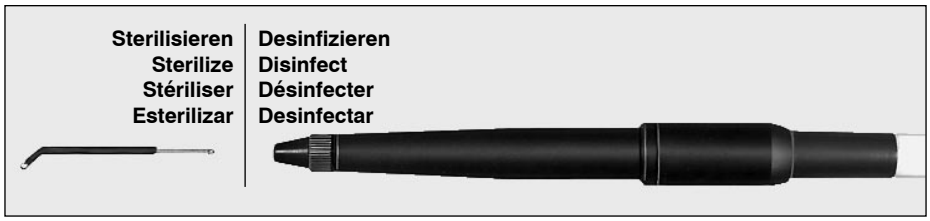
Ultrasonic scaler

- Sterilize the instrument insert of the ultrasonic scaler in the autoclave with a temperature up to 135° C.
- Replace the scaler tip.

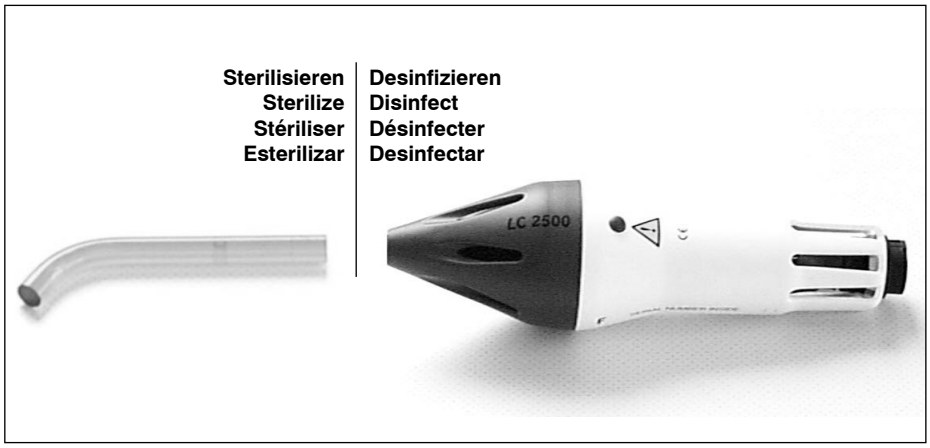
Electro-surgical unit

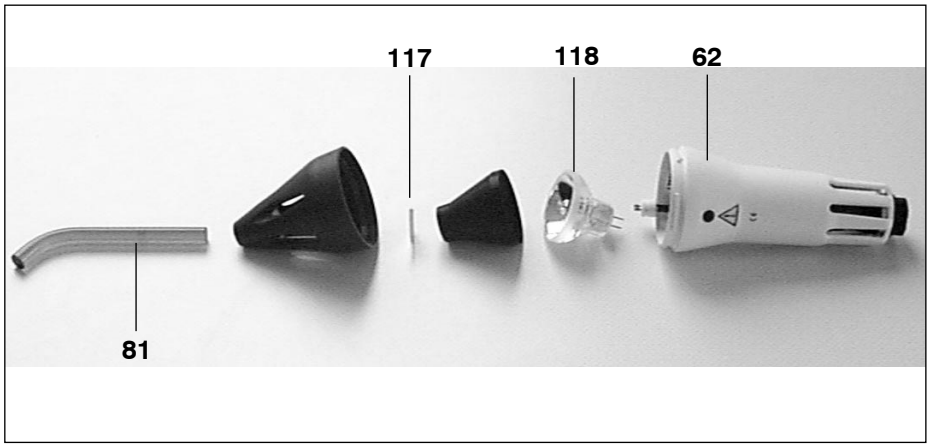
- Sterilize electrodes and transparent plastic protective cap of the electro-surgical handpiece in the autoclave with a temperature up to 135° C.
- Disinfect electro-surgical handpiece and cable.

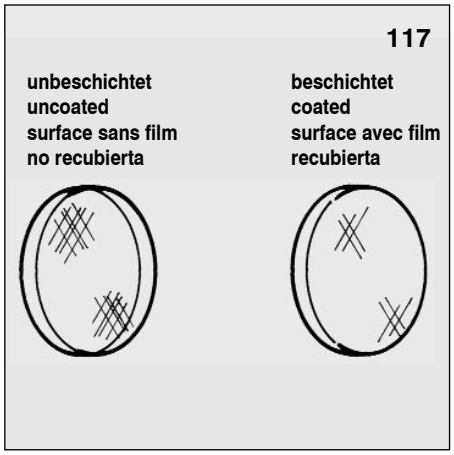


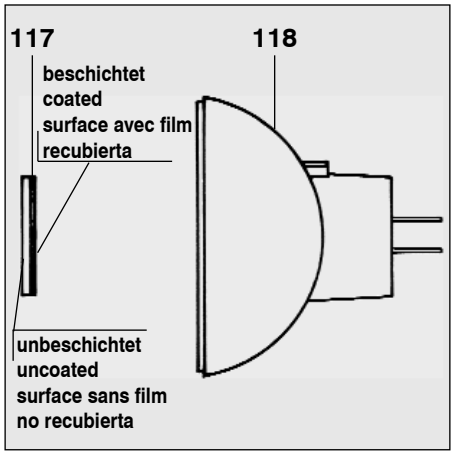


Important: The instrument hoses are not to be cleaned in a thermodisinfector. The hoses can be subjected to a temperature of maximum 40° C.









Curing light Lysta LC 2500

- Disinfect handpiece and cable of curing light. Do not clean in a thermodisinfector.

- The light guide (81) can be autoclaved.

- When inserting the light guide (81) into the handpiece (62), there must be good contact with the blue filter (117) (audible click).

- Wipe the blue filter (117) with alcohol and dry with a soft tissue.

- Install the filter (117) with the coated surface towards the lamp (118). The coated surface is recognized by turning the filter in a projection angle of 45 degrees. The uncoated surface has a double reflex at the far edge.

- When replacing the halogen bulb (118) (Order No. F 266-172) do not touch the bulb glass or the inside of the reflector. Remove all finger marks with a cotton cloth moistened with alcohol.

Important: For instruments not made by Ritter, the manufacturer's instructions have to be adhered to.

Units equipped with amalgam separator MST 1

Exchange of the amalgam waste container

When the amalgam collector is 95 % full, the LED indicator (15) blinks slowly (two-second intervals). The amalgam collector (121) must be replaced.

It is recommended to wear protective gloves.

Please proceed as follows:

- Cut OFF main switch of dental unit
- Open door (68) at unit column (magnetic lock)
- Disengage locking bar (120) by pushing it upwards and with both hands slide container (121) together with upper part (122) (pump housing) carefully off its holding track.

- Place container on a flat, non-slide surface, disengage the four clips (123) and carefully lift off the upper part (122) of the container.

- Clean the three probes (124) with a tissue and the strainer (125) with a brush. Inspect air brake (126) and water separator (127) for contamination and clean them with a brush.

Important: Assure correct seat of the air brake (126) - see picture on the right.

- Place the upper part onto a new container (observe container marking VORNE/FRONT) and secure the four clips.
- Slide the container carefully back into its holding track and secure with locking bar.
- Replace filter drawer (92) by a new one. The contaminated filter drawer is to be deposited into the still opened old container.
- Take the bag of disinfectant which was included with the new container. Open the bag and pour the contents into the old, full container.
- Close the full container with the green lid (128).

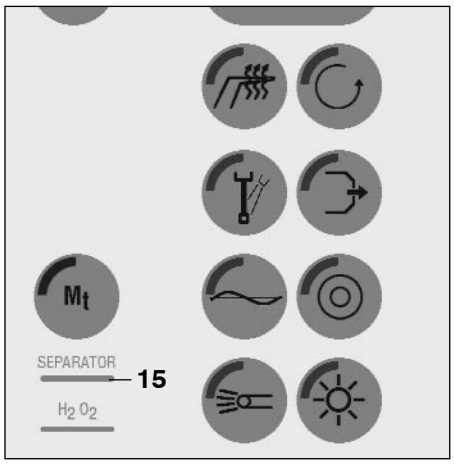
Important: The lid with its eight safety lugs must snap onto the container with an audible click!

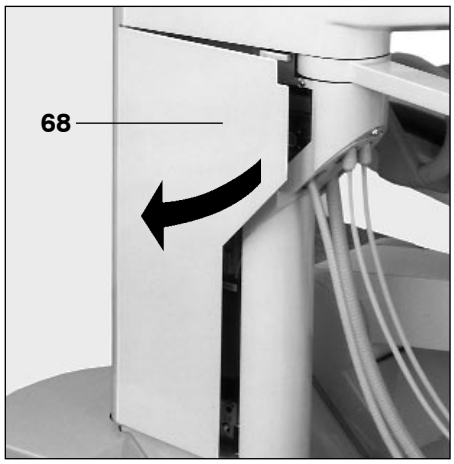
- Place the container into the mailing package and send it to the following address:

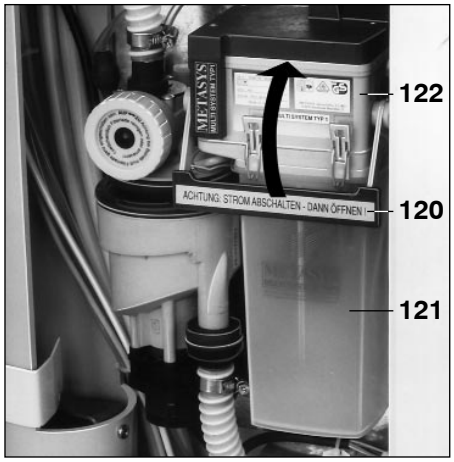
Austria

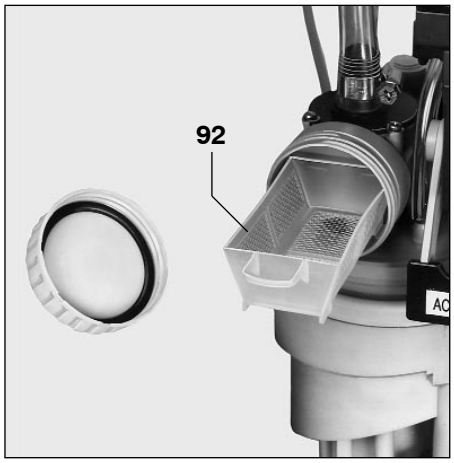
METASYS
Produktionsges.m.b.H.
Florianistraße 3
A-6063 Rum (bei Innsbruck)
Tel. 05 12/20 54 20-0
Fax 05 12/20 54 20-7

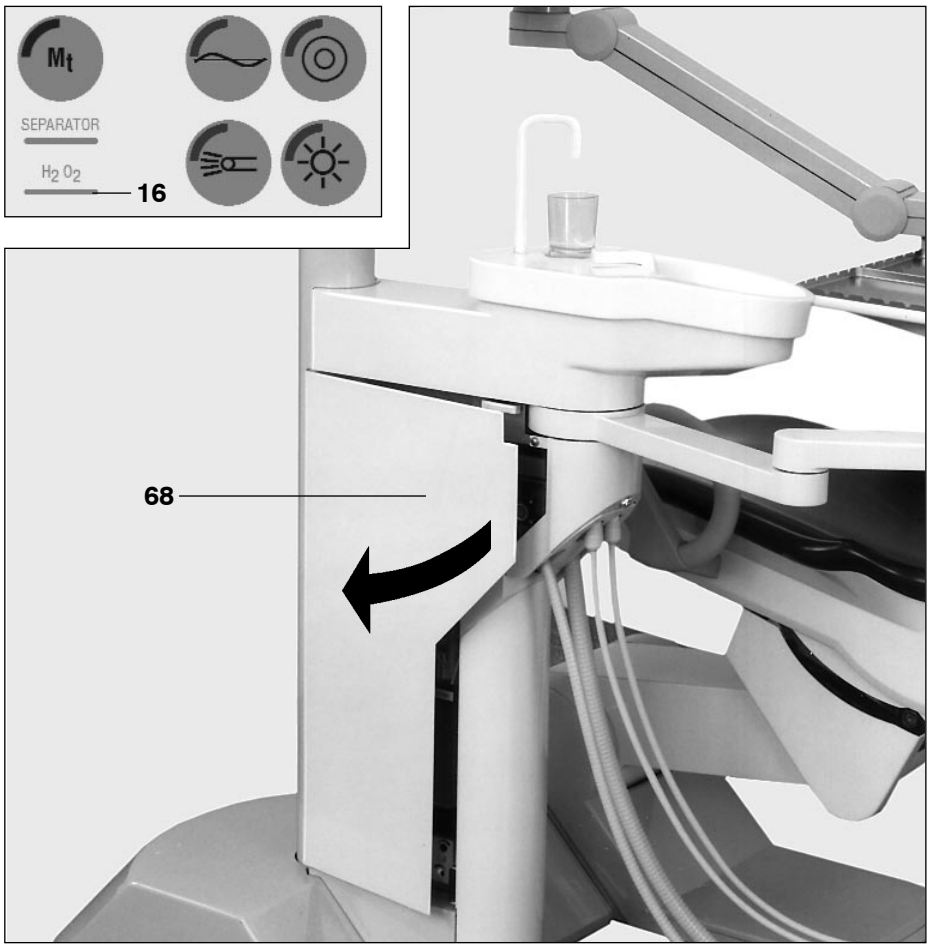
A mailing package with a new container will be sent to you by the special waste disposal firm without any special request.











Unit equipped with water disinfection system WES D628:

Refilling of water disinfectant solution

When the H2O2 container is almost empty, the LED indicator (**16**) blinks. Formatex has to be refilled.

For this task, protect yourself with protective gloves and protective glasses.

Switch OFF main switch in patient chair pedestal. Open door (**68**) at the unit column (magnetic lock).

Unscrew cap (**107**) from the filler neck of the water disinfectant tank and refill Formatex up to the marking MAXIMUM.Please observe the expiry date indicated on the bottle.

After closing the tank and the door, switch main switch ON again.

Important: Only water disinfectant Ritter Formatex (Order No. U 4700) is to be used.

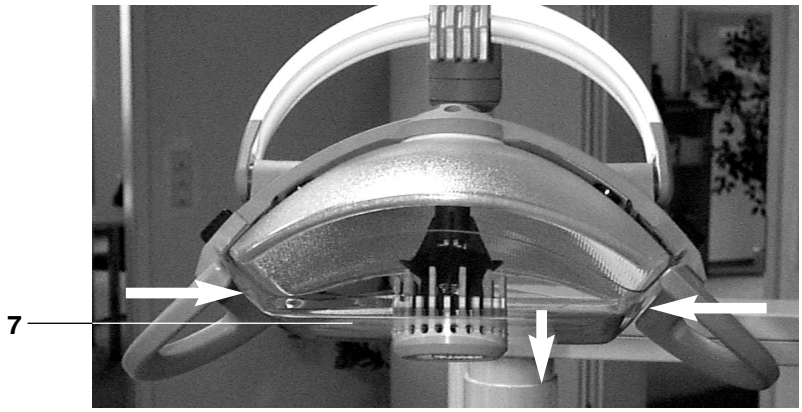
Operating light Starlite D428U

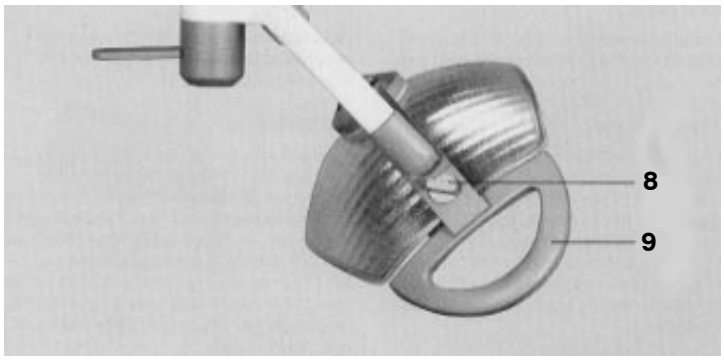
In order to keep the light quality on a constant level, the safety shield (**7**) must be cleaned frequently with warm water and soap. The safety shield is wedged between the two handles. Easy to remove by applying slight pressure to both ends towards the bulb.

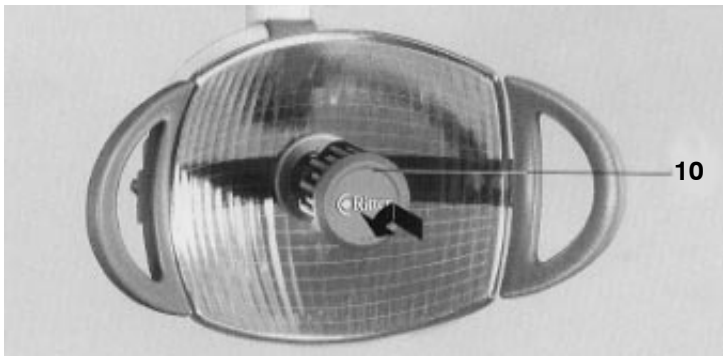
For disinfection of the handles (**9**), the handles should be removed. First, remove safety shield, as described above. Unlock capstan-head screw (**8**), lift and remove handles.

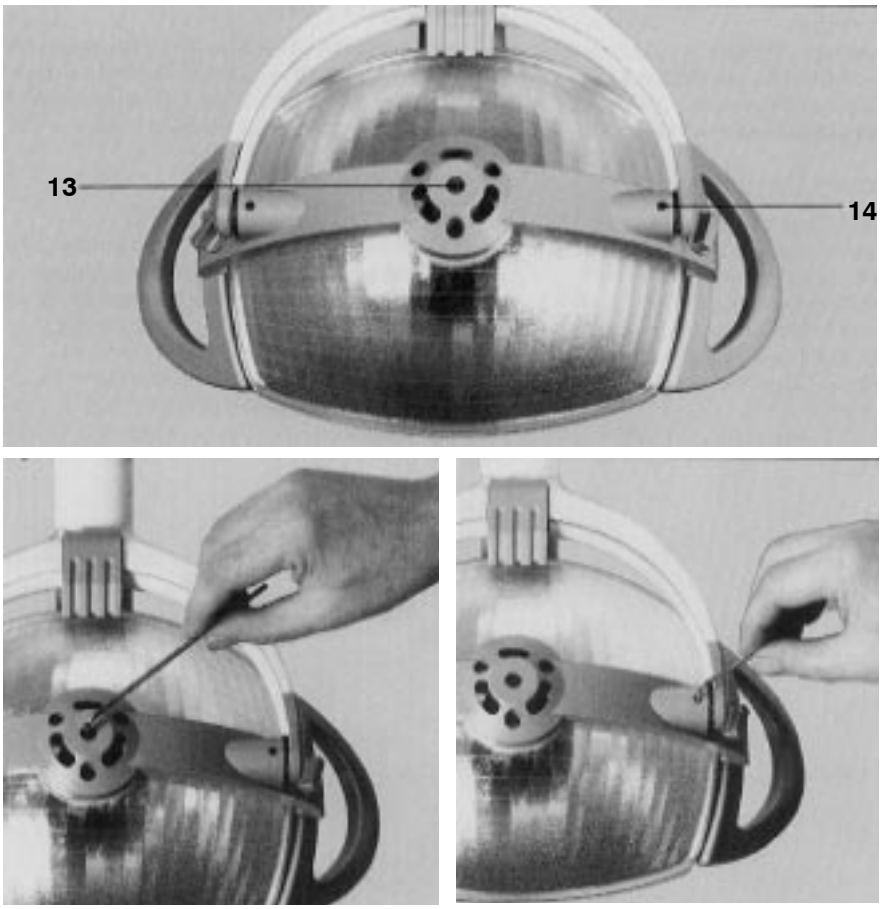
Replacement of the halogen bulb

Cut-off main power supply. Let the halogen bulb cool down and remove safety shield. Just push in, twist to the left and take off deflector (1**0**) (bayonet-type lock). Remove halogen bulb (1**2**) from socket (11). When replacing with a new halogen bulb take care not to touch the glass. Any finger prints are to be wiped off with an alcohol-moistened cloth.









Operating light Starlite D428U

Adjustment of the illuminated field

The illuminated field has already been adjusted at the factory. Therefore, only de-adjusted light fields have to be adjusted again..

Attention! We would like to emphasize that a reduction of the illuminated field at a later date will increase the light intensity and results in a inadmissibly high temperature.

A black surface and some chalk are required. Draw a 10 x 20 cm rectangle on the surface. Position the Starlite reflector vertically at a distance of 80 cm over this rectangle and selectthe lowest light intensity. Darken the room. Adjust the illumination field to the rectangle by right or left turn of screw (1**3**) with Allen wrench (size 3, in the accessories). The transition between light and dark must be within the rectangle.

Adjustment of yoke pivot friction

The adjustment of the yoke pivot friction has already been made at the factory. It has to be readjusted only in case the reflector is moving too hard or pivots too freely.

The friction can be reduced or increased by readjusting the two self-securing threaded pins in the yoke. Use Allen wrench (size 2.5) in the accessories.

Cleaning of the dental work place

Clean painted and plastic parts with water and soap.

For disinfection and cleaning only use those agents recommended by us, for example Esemfix, Mikrozid Liquid, Incidin or Incidur.

We would like to emphasize that the manufacturer's instructions must be strictly adherred to when handling disinfectants. Otherwise, even if applying the recommended agents, discoloring of covers cannot be excluded entirely.

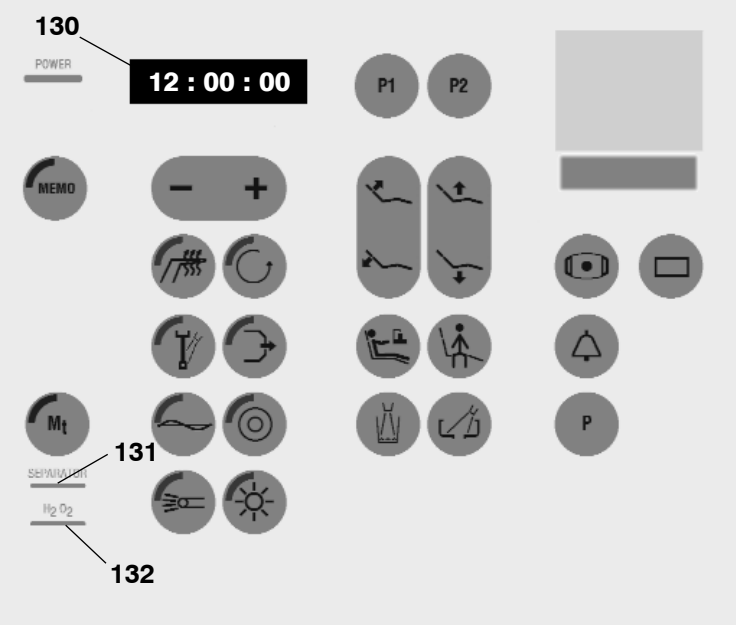
When wearing disposable gloves made of latex, discoloring of the plastic parts may occur. No such discoloring was registered with disposable gloves made of silicone, vinyl or polyethylene.

Do not use any metal polish.

Dry drops of water, blood or chemicals immediately.

Cleaning of upholstery and covers

Use only warm water and soap. Remove soap residues with a damp sponge. Dry with a soft cloth.



Under certain circumstances the equipment will give optical and/or acoustic signals which allow tracing of the failure.

Optical signals:

LED (131) blinks in two-second intervals:

- suction still working - amalgam separator has reached a filling level of 95 %.
- suction not working - amalgam separator 100 % full.

This signal is coupled with an acoustic signal.

LED (131) blinks in one-second intervals:

Centrifuge failure of amalgam separator call service technician.

LED blinks twice shortly in four-second intervals:

Refill water disinfectant solution.

LED (132) constantly illuminated:

Failure of the water disinfection system,

no safe function, - call service technician.

LED (132) blinks slowly (3 seconds on 0.5 seconds off):

Incorrect dosage, no safe function - call service technician.

Signal in Display (130)

- SISx - x stands for a figure between 1 and 6: Safety stop activated - possibly one of the switches blocked (please refer to operating instructions "patient chair") or call service technician.
- Sixaktiv - x stands for a figure between 1 and 6: safety stop activated during chair movement - eliminate interferece.

This optical signal is coupled with an acoustic signal.

Acoustic signals:

Long beep when initiating chair movement or during chair movement:

One safety stop was activated, see optical signal in display.

Four groups of four short beeps after activating and during chair movement to exit position:

Amalgam separator has reach a filling level of 95 %, see optical blinking signals.